Railway Age

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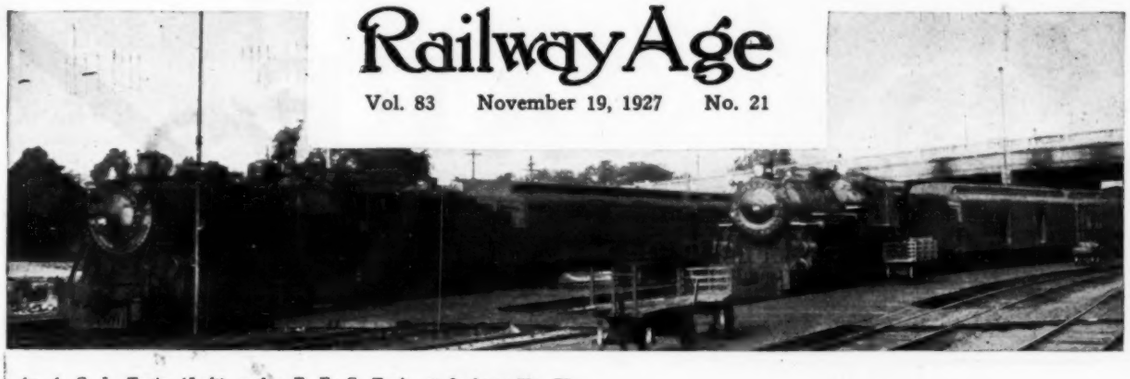

An A. C. L. Train (Left) and a F. E. C. Train at Jacksonville, Fla.

Contents

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Railway Age

Vol. 83, No. 21 November 19, 1927 Table of Contents Appears on Page 5 of Advertising Section

Draft Gear Creep

WHILE creeping is usually recognized as a desirable stage of development in a child's efforts to walk, not everyone, even among railroad officers, recognizes that freight car draft gears also frequently "creep," and in these cases there is absolutely nothing commendable about the characteristic. Last week a tonnage freight train was being operated up a heavy grade with two locomotives pushing when an observer noticed that on almost every car one or both of the coupler horns was up against the striking casting, indicating that unless defective in some other way each of the draft gears involved was at least deficient in its resistance to a tendency to close gradually under the application of a constant heavy pressure. The question may be asked, What harm was done? Possibly none when the train was moving up a uniform grade. A gear which will creep closed under a steady push, however, will creep the other way under a steady pull, and in the latter case slack action in a long freight train will almost inevitably break some part of the coupled mechanism and part the train. The questions obviously raised by the instance mentioned are these: If, in a single modern freight train, such a large proportion of the draft gears are deficient in their resistance to creep, or else defective in some other possibly more serious way, how many draft gears on American railroad cars as a whole are in this condition? What are these defective gears costing the roads?

The Railways' Interest in Air Transportation

THE interest that many railway executives have expressed publicly in the possibilities of air transportation is a good sign for it indicates that the roads are not going to be taken unawares by a possible extensive development in that form of transportation as they were to a large degree by the surprising spread of highway transportation. Regular transportation service by airplane in this country is very recent, but already it has established itself on a basis which, because of its performance, must be conceded as permanent. What effect the full development of air transportation in the United States will have on the railways is a question upon which no one is competent to answer at this time. We cannot say, because the present characteristics of the facilities for air transportation are such as to limit its use rather rigidly, that such limitations will be permanent. Quite the opposite view is better justified in the light of experience with the development in facilities for other forms of transportation. Men most closely in touch with air transportation generally agree that it will be a complement rather than a competitor of railway service, and this is a view which may be reasonably accepted until it is proved wrong. In the meantime, however, their own best interests dictate that railway officers should keep themselves currently informed of the progress that is being made in the development of air transportation. If it should continue to develop as an adjunct to railway service, they will want to be fully informed about it so that they can make full use of it in this direction. On the other hand, if air transportation should become a competitor of railway transportation, they will want to be informed about it so that its competition can be met intelligently. Whatever the ultimate status of air transportation will be, railway officers will find it at least interesting and probably most valuable to keep in close touch with it.

Need for Scientific Study of Passenger Traffic Trends

RECENTLY on a train north-bound from Florida a young man of energetic appearance was a passenger. He seemed nervous and ill at ease. When a solicitous fellow-traveler asked him what troubled him he replied: "This is the first time I have been in a steam train for seven years and my hands are itching for a steering wheel." Further conversation revealed that the young man had in all this time traveled extensively throughout the country—probably 5,000 miles a year at least, in long distance trips—and every one of them had been made in his own automobile. To compound such testimony would be easy—a twelve-year old child who has never yet ridden on a train and who nevertheless has visited most of the large cities of the country and most of the national parks, who has seen both oceans and has made a trip to Europe, for instance. Before the war to have found a youngster outside the backwoods with as little experience in railroad travel would have been almost impossible.

Just what does the future hold for railroad passenger service with this plainly-evident preference of large numbers of people for "riding on rubber"? That the question is a serious one to the railroads cannot be questioned. If the railroads had the $380,000,000 they are losing annually by reason of this competition they would be measurably nearer earning the percentage on their valuation to which they are entitled under the law. Moreover, they have not been able to match the decline in business by equivalent reductions in service which would have been possible had the decline been in freight business.

Just what are the outstanding facts of the decline in passenger business? Some of them are fairly generally known: (1) the heaviest loss has been in short-haul coach traffic; (2) commutation business tends to show but slight losses and is even increasing here and there; (3) long-haul Pullman business has increased. With the acceptance of the above facts, however, general knowledge of the situation is almost at an end. On other points at the recent convention of the American Association of Passenger Traffic Officers testimony varied widely. Some reported a heavy increase in de luxe through travel.

Others declared that in their territory motor vehicles were carrying an increasing share of the long-haul business. In some cases the railroads are even losing their low-rate commuters. In other commutation territory the low-rate business is increasing while the full-rate middle-of-the day passengers are deserting the trains.

Good road mileage is increasing steadily in districts not heretofore provided with year-round hard surfaced highways. Meantime in regions where good highways are already numerous, congestion is growing and motor travel is becoming slower, less comfortable and more dangerous. What effect will these conflicting tendencies have on future railway passenger business?

Is the time not propitious for a thoroughgoing scientific study of the situation, covering all railroads, all problems and all proposed remedies? The *Railway Age* advances this thought with the full knowledge that passenger traffic problems and remedies vary most widely from road to road in a manner unlike most situations which confront the railways. For instance, avoidance of rough handling will reduce damage claims on an eastern road as well as on one in the west. Whereas, on the other hand, the nature of their passenger traffic differing so widely, certainly identical methods of increasing it will not be equally successful in both territories. But the existence of these difficulties should not deter study. For with problems, like other situations in life, "the bigger they are the harder they fall," when once energetically tackled.

Obsolescence in Railway Buildings

AN outstanding example of the rapidity with which railway structures become obsolete because of the constant development in other facilities which they serve is afforded by the reconstruction of the Wabash locomotive shops at Decatur, Ill., a description of which appears on a following page. These facilities were built new only 13 years ago; yet the development in motive power and in its care have been such that extensive rebuilding has now been warranted.

This is not an unusual instance. Not many years ago the chief engineer of another large road was confronted with the problem of locating a new shop building in an existing layout. He could place it where the ultimate development showed that it belonged, or he could locate it where it would be most convenient for present use with the existing facilities. He chose the latter alternative in the belief that the ultimate development was far in the future, but it has been his observation that within 15 years changing conditions made necessary the gradual reconstruction of the other facilities one at a time with the result that the one building whose location was influenced by these other facilities is now the "sore thumb" of the entire layout. In other words, he seriously underestimated the rapidity with which the average facilities at a busy terminal are now being rebuilt to keep pace with growing traffic and improved methods of railway operation.

Rapid as the reconstruction of railway facilities of this character has been, it is still lagging behind the development in other facilities and methods with the result that many obsolete terminal facilities are in service today, the cost of operating which is so high as to warrant their reconstruction to modern standards. These are days of rapid improvement in methods, in which many facilities become obsolete long before their normal service life has been reached. This is particularly true of terminal facilities.

Life of All-Steel Freight Cars

THE railroads in this country have adopted one of two general policies of maintaining all-steel freight cars. Briefly, one is to renew or patch as each part becomes defective and the other is to tear each car down completely at more or less regular intervals and rebuild it with either new or reclaimed material. The latter policy seems to be in the most favor at the present time. The general policy of steel car maintenance has, however, an important bearing on the amount of equipment that a railroad must own and operate in order to meet traffic requirements and it is quite important that a railroad know, with a fair degree of accuracy, what the average life of a freight car on its lines should be. This information is necessary not only for the purpose of planning an economic schedule of repairs, but also to provide replacements.

Eight years seems to be considered the average life of an all-steel freight car between major repairs or rebuilding of the body. This figure, however, has been a subject for discussion ever since the all-steel equipment began to supersede cars of wood construction. The first two all-steel cars for modern service in this country were built in 1896, the bodies being of the self-clearing hopper type, 30 ft. long, and having a capacity of 1,015 cu. ft. These cars, which are now in service, were purchased in 1902 by the Bessemer & Lake Erie, the traffic of which consists largely of iron ore, bituminous coal and limestone. The trucks were originally of Fox design, having 4¾-in. by 8¼-in. journals. The axles were, however, changed soon after the cars were purchased by the Bessemer to 5 in. by 9 in. in order to comply with the standards adopted by the Master Car Builders' Association for 80,000-lb. cars. Later, 5½-in. by 10-in. arch bar trucks were substituted under one of these cars and the capacity was changed to 100,000 lb.

The repair records up to March 4, 1915, on the 100,000-lb. capacity car show that one pocket sheet was renewed in December, 1901, and three pocket sheets were renewed in April, 1905. In April, 1907, two side sheets were renewed and four floor angles spliced. In August, 1909, four side sheets, two side stakes and one pocket wing sheet were renewed and four side stakes repaired.

In September, 1910, one side sheet was spliced and in May, 1911, two floor sheets and two floor sheet angles, were renewed. A year later the car came into the shop for the renewal of one floor sheet and one floor sheet angle. The heaviest repairs made to the car since its construction were in September, 1914, after about 19 years of service, when a new floor, new divide sheets, eight pocket sheets, four side stakes, two corner side sheets, four floor angles, new hoods and six divide sheet angles were applied to the car. Repairs were made to the sides of the car body at the same time. Five side stakes were repaired on March 4, 1915.

The record of repairs made to this car since March 4, 1915, is in general, similar to the repairs made during the first 18 years of the life of the car, except for the extensive repairs in September, 1914. In other words, the repairs since 1915 were to individual parts damaged by corrosion, accident, or wear and tear by unloading machinery. At no time during the 31 years' life of this car were copper bearing sheets applied, nor was it necessary to strengthen the center sill construction, the original center sills being 15-in. I-beams which have stood up exceedingly well in service. It will be noted that with the exception of the repairs made in September, 1914, all repairs made during the first 19 years of its life were of a comparatively minor nature. The heavy repairs made in 1914 were essentially floor repairs and cannot be considered as a complete rebuilding.

The practice of repairing individual parts as they become defective has been a big factor in prolonging the life of this car, for at no time during its life was the car completely rebuilt. The weight of the car, 39,950 lb., shows that it was of fairly heavy construction. It is also interesting to note that the larger proportion of repairs were made to the body structure.

Of course, general conclusions cannot safely be drawn from the citing of a single case. It is evident, however, that three factors control the life of an all-steel car, namely: design, treatment while in service, and the character of maintenance. The life period during which the car can be maintained and operated economically is a matter of concern to the railway executive. Practically every railroad has available in its own car and stores department files sufficient data by which a close estimate can be made of this economical life period. This information should be kept up to date and used, for it will not only provide an excellent check on the relative value of different designs, but it will show which cars are receiving most severe usage, especially that caused by unloading machinery. It will also indicate whether or not an economical policy of car maintenance is followed.

Chairman Esch on Rate-Making

CHAIRMAN JOHN J. ESCH of the Interstate Commerce Commission, speaking for himself and other members of the commission, in a recent letter to Alba B. Johnson, president of the Railway Business Association, made some observations regarding railway rate-making which seem significant and entitled to careful consideration by railway officers. Chairman Esch's letter was published in the *Railway Age* of November 12, pages 936-938.

"While the commission is charged by law with the duty of initiating rates which will yield as nearly as may be a fair return," said Mr. Esch, "nevertheless the principal burden of preparing data for the commission to enable it to carry out this duty must perforce rest upon the carriers." After reviewing general advances and reductions of rates, both made and proposed under the Transportation Act, Mr. Esch continued: "Indeed, although the commission's decision in the western case rendered in July, 1926, indicates in a general way that the carriers proved their contention to the extent of showing that some rates in that part of the west ordinarily known as western trunk-line territory are too low and may with propriety be increased in order to bring up the aggregate revenue, no concerted action has been taken by the carriers to increase such rates, except that there is now pending a proceednig initiated by the commission at the request of the carriers into the class rates in that territory."

Referring to the commission's general investigation of the rate structure under the Hoch-Smith resolution, the chairman said, "One of its acts in that proceeding was to send out questionnaires to carriers with respect to several important commodities asking for various kinds of information, including data as to what, if any, rates on such commodities or on other traffic might properly be increased." The answer received from most carriers was that if rates on agricultural products should be reduced, "the needed additional revenue to compensate therefor should be obtained by blanket increases on all remaining traffic, * * * although the commission in the decision in the western case expressed its disapproval of that method except to meet emergencies, indicating that before the necessity of a general increase of all rates can be determined, those rates which are not paying their fair share of the transportation burden should be increased to a proper basis."

It is not hard to surmise what Mr. Esch was driving at, especially with reference to the situation in western territory. There are in that territory numerous state rates that are too low as compared with the interstate rates. There are also rates on commodities moving in large volume that are too low as compared with the general level of rates. These rates may not be so low as to involve unlawful discrimination, but they are so low that they do not contribute their fair share toward total railway earnings. Many criticisms have been voiced regarding the commission's regulation of rates. Chairman Esch has made the retort courteous to some of these criticisms. He has said, in effect, that the railways themselves have been at fault—that they did not take the initiative in seeking readjustments needed both to make the rate structure fairer and to increase their earnings, and that even since the commission intimated to them what they ought to do they have continued to sleep upon their rights.

The traffic officers of the railways may answer that the commission shows a tendency to suspend and finally reject almost every advance in rates they propose. It cannot be questioned, however, that there is truth and force in what Mr. Esch has said. Much the same thing often has been said by railway officers and well informed shippers. The trouble is that it has been easier to get the railways to agree to seek general advances in rates in large territories than to get them to agree to seek advances in restricted territories or on particular commodities. When they seek a general advance throughout a large territory the resistance to it is met by all of them in about equal measure. When they seek advances in restricted territories, while no corresponding advances are proposed in more or less competitive territories, a few roads are immediately confronted with strong opposition from their patrons on the ground that the proposed changes will put their patrons at a disadvantage in competing with shippers served by other railways. Likewise if they propose to advance rates only on particular commodities they meet with especially strong opposition from the shippers of those commodities, who are often successful in getting one or more roads to refuse to go along, with the result that the movement becomes abortive.

There is still need, as there always has been, for beter co-operation between the executives and traffic officers of the railways regarding rate matters. It is only too well known that there is nothing more difficult in railroad management to bring about than loyal and courageous co-operation between competing railways in initiating and maintaining rates. The theory that competition in rate-making has been abolished by regulation is only partly true. Every railway still wants the shippers in its territory to have advantages in rates. Every railway is still afraid of being suspected by a big shipper of favoring an advance in his rates lest the result will be the diversion of his traffic from it to other lines.

When, however, rivalries of competing railways result in keeping in effect rates on all of them that are too low and, therefore, not fairly remunerative, such rivalries become not only harmful, but indefensible and foolish. The time ought to come when the traffic officers of competing railways could, in the interest of all of them, sit down in a room, agree on needed changes in rates and then in good faith with each other, stick together in seeking them.

In no other territory has there been such need of this kind of co-operation as in the west. No doubt it is partly in consequence of this that the western group of roads has persistently failed, since the Transportation Act has been in effect, to earn anywhere near as substantial net returns as the railways of the east and south.

Chairman Esch's letter sounds, in some parts of it, like a broad hint to the western lines that the commission might be more disposed to help them if they showed more disposition to help themselves. What answer, if any, in the form of action will the western lines make?

A Railroad Conundrum

"TAKING the country as a whole, the railways must ever bear the major burden of our goods traffic.* * * Our railways have reached the highest efficiency in their history and we must maintain them in that condition. * * * With the higher cost of labor and materials we cannot expect any consequential reduction in our railroad rates without ruin to that vital circulating system." The foregoing quotations are from an address delivered by Secretary of Commerce Herbert Hoover at St. Louis on November 14.

"The more expeditious and dependable service rendered by the carriers in recent years has resulted in a general tendency on the part of industries to maintain comparatively low stocks of raw materials and manufactured products as they rely upon their ability to obtain additional supplies on comparatively short notice without transportation delay. This has, to a marked degree, lessened the amount of capital invested in stocks of raw materials and manufactured goods, and undoubtedly has had some effect in bringing about the very easy money market which has generally obtained in the last year." These statements are quoted from a letter recently written to Alba B. Johnson, president of the Railway Business Association, by Chairman John J. Esch of the Interstate Commerce Commission, speaking for himself and other members of the commission.

There could be no higher official government pronouncements regarding the character of the service being rendered by the railways or concerning its value to the industry and commerce of the nation than the above.

With these very recently made and significant statements by our highest governmental authorities on transportation and commerce before us, let us enumerate a very few of the important movements now under way that are intended to affect railway earnings and operating expenses.

(1) Railway employees, especially those in train service, are seeking general advances in wages.

(2) Western senators, congressmen and others who presume to speak for the farmers are demanding general reductions of freight rates on farm products and have announced that unless these are made by the Interstate Commerce Commission they will seek to have legislation reducing such rates passed by Congress at its next session. The Hoch-Smith resolution apparently contemplates reductions of freight rates for all industries that can show they are "depressed" and already the commission, under this resolution, has ordered reductions on coal and deciduous fruits.

(3) Efforts are being renewed to get Congress to pass a law to abolish the "surcharge" in sleeping and parlor cars and thereby deprive the railways of $40,000,000 earnings annually.

(4) Section 15-A contains the rate-making provisions of the Transportation Act and was intended to assure to each group of railways opportunity to earn a "fair return." Only in 1926 have the railways as a whole earned approximately what the commission has held would be a "fair return"; the western railways have never earned it; the net return of the roads as a whole declined $83,000,000 in the first seven months of 1927; and yet there is strong agitation for the repeal of Section 15-A. Senator Earl B. Mayfield of Texas, in a recent address before the National Association of Railroad and Utilities Commissioners, denounced it as "an outrage to which I hope the people will not longer submit." There always have been wide differences of opinion about Section 15-A, but the reason why western radical statesmen advocate its repeal is plain. They believe its repeal would facilitate reduction of rates.

(5) The Interstate Commerce Commission is favoring a method of valuation which probably would result in the valuation of the railways being made substantially less than the actual investment in them. Its counsel are defending its method on the ground that railways are not entitled to the same protection from confiscation as other kinds of property, and, therefore, should have their net return so regulated as to "enforce with practical wisdom the closest practicable analogy to government ownership and operation." What that means is that valuation and the return allowed to be earned by them should be on a much lower basis than what has been held reasonable for other kinds of property or even for public utilities.

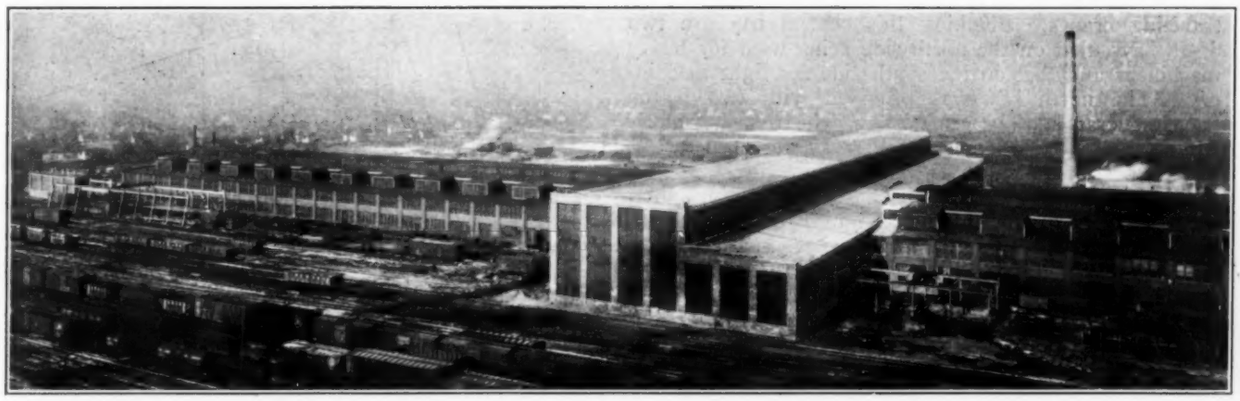
(6) In addition to the above forms of direct regulation being advocated for the railways, there are being advocated different forms of indirect regulation also tending to reduce their earnings. A proposal has been submitted to the secretary of war that the government increase by $50,000,000 the capital stock of the Mississippi-Warrior Barge Line. This line was originally established experimentally by the government to determine the feasibility and advantages of water transportation, with the expectation that after it was established the operation of the line would be turned over to private capital and enterprise. The proposal now made is for the embarking of a further large amount of government money in the promotion of water competition with the railways.

(7) In his address from which we quoted above Secretary Hoover advocated development by the government of the "Mississippi System"—that is, the Mississippi river and its principal tributaries—"to permit modern barge service." He also advocated "construction of the St. Lawrence shipway from the Lakes to the Atlantic." The purposes of these projects are, of course, and if successful, their effects would be, to divert from the railways traffic they need, reduce their rates and deprive them of earnings.

(8) Meantime, development of motor transport on highways built at government expense continues, with the result of constantly increasing the amount of passenger business diverted from the railways.

The utter inconsistency between the views and movements above mentioned is apparent. Undoubtedly the nation must, in future, depend mainly upon its railways for transportation. Undoubtedly the character of their present service is as good, its value to the public is as large, and the importance of maintaining it is as great as Chairman Esch and Secretary Hoover have indicated. We do not here either question or concede the public expediency of the proposed development of inland waterways.

What we would like to have some wise man tell us is how our "magnificent railway system", as Secretary Hoover calls it, is to continue to function with the efficiency all persons concede is essential to the national welfare if its wages are to be advanced; freight rates on farm products and passenger earnings are to be reduced by legislation; freight rates of all "depressed" industries are to be reduced; the "analogy to government ownership and operation" is to be enforced by basing rates on a confiscatory valuation; and large amounts of traffic the railways need are to be diverted to waterways and highways.



How a New Transverse Shop was Introduced into the Middle of an Old Longitudinal Plant

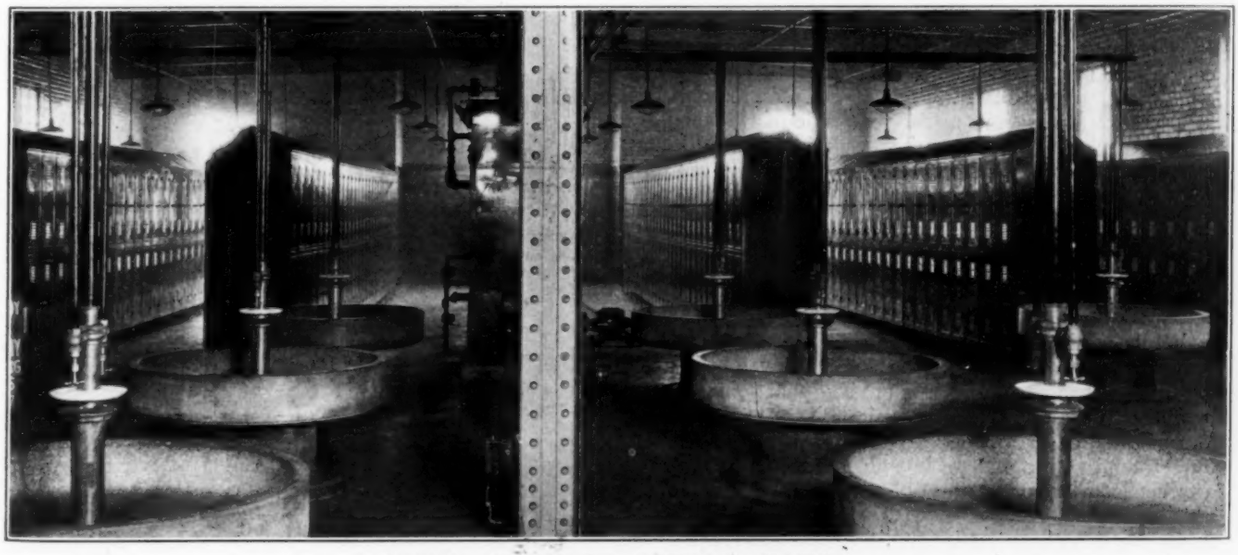
Wabash Employs Novel Plan to Enlarge Locomotive Shops

Co-ordination of new and old facilities entails unique scheme of routing repair work through the plant

THE Wabash recently completed extensive improvements at its system shops at Decatur, Ill., which embodied the enlargement of the locomotive repair shop in accordance with a most unusual plan. It involved the addition of a new erecting shop of the transverse type to a plant which had been designed and operated as a longitudinal shop, yet this change was made with a minimum of alterations to the old structure. In fact, only 13 per cent of the original building was removed in effecting a net enlargement of 31 per cent in the ground floor area. Furthermore, the change involved only a relatively small rearrangement of the various operations conducted in the old shop. These results were made possible through the development of a combination of the transverse and longitudinal plan of operation which insures the most advantageous use of both the new and old portions of the shop.

Old Plant Only 13 Years Old

Another noteworthy feature of this improvement is that it represents an extensive addition to facilities completed only 14 years ago, an outstanding example of the marked growth in the demand made upon locomotive repair facilities. The building of the old shop, which was placed in service in 1913, was the last step in a five-year program to replace the repair facilities at Fort Wayne, Ind., Springfield, Ill., and Moberly, Mo., by a centrally located system shop. It is 160 ft wide by 1,118 ft. long with a central bay, 80 ft. wide and 38 ft. high under the roof trusses, that is served by two 75-ton



Well Appointed Locker and Lavatory Facilities

traveling cranes. Flanking this central bay are two 35-ft. bays, that on the north side being used for heavy machinery and that on the south side for light machinery. The north bay was provided with two 10-ton traveling cranes. The central bay, which was formerly equipped with three longitudinal tracks was used for the greater part of its length as the locomotive erecting shop while its westerly end served as the erecting shop for the boiler and tank shop, the auxiliary facilities of which were concentrated in the side bays at that end of the building.

Located to the north of the locomotive shop and separated from it by an alley 50 ft. wide is a blacksmith shop 100 ft. by 300 ft. and a storehouse 50 ft. by 300 ft. provided on both sides with car level platforms. Flue rattlers and a flue storage shed are located south of the locomotive shop near its west end.

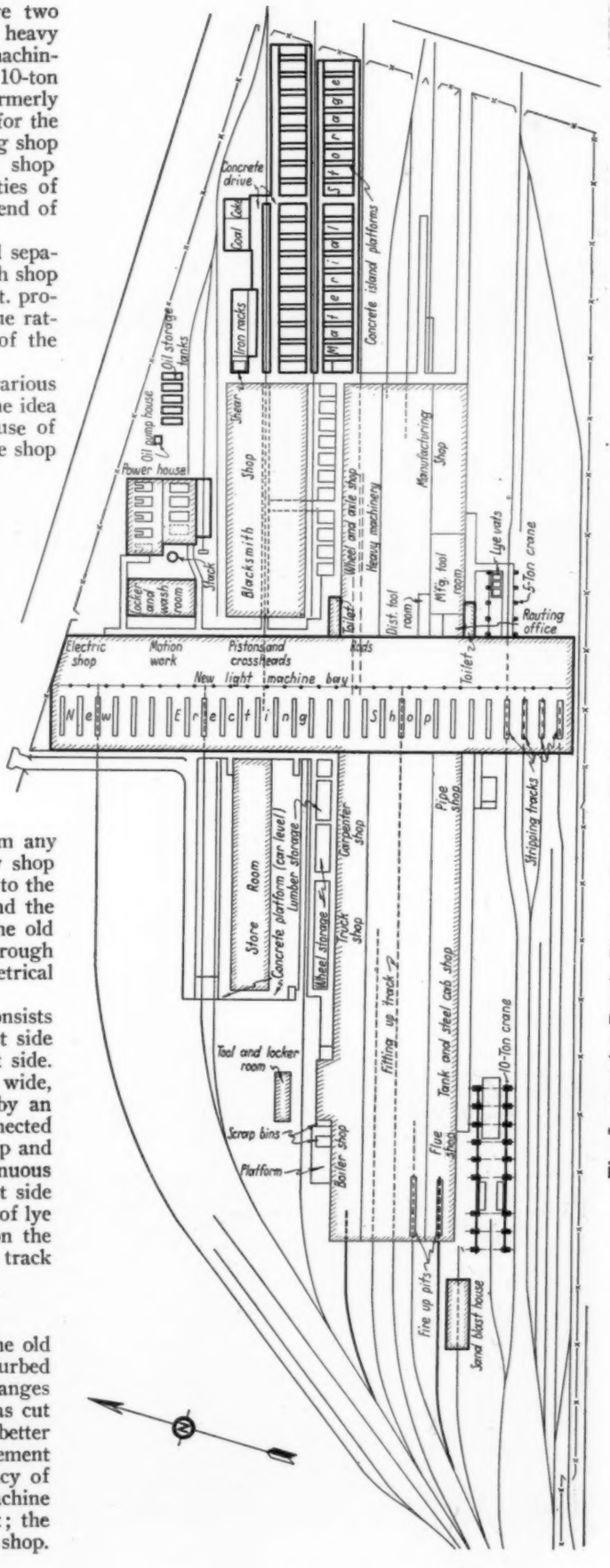
When the 1913 facilities became inadequate various schemes were considered for their enlargement. The idea of lengthening the building was abandoned because of the disadvantages of an excessively long locomotive shop of the longitudinal type. A plan for placing the boiler and tank work in a new separate structure and converting the old building into a transverse shop to be used exclusively for the repair of locomotives was also found impracticable because the limited headroom in the erecting bay precluded the lifting of locomotives over those standing on the pits. Another scheme considered was that of building a new erecting bay of the transverse type north of the present building and using the old central and south bays for heavy machinery but this would have involved the removal of the store building after only 14 years of use and would also have introduced certain operating disadvantages and an awkward arrangement of approach tracks.

The plan finally adopted differed radically from any of these. It embodied the construction of a new shop of the transverse type in a position at right angles to the old one between the ends of the store building and the boiler shop, and the removal of just enough of the old locomotive shop so that the new shop could cross through it to form a building in the shape of an unsymmetrical cross.

This new building is 673 ft. 11 in. long and consists of an erecting bay 85 ft. 2½ in. wide on the west side and a machine bay 64 ft. 9½ in. wide on the east side. It is divided into 29 transverse bays 23 ft. 2 in. wide, each of which is occupied in the erecting shop by an engine pit. Pits No. 1, 2, 3, 4, 21 and 27 are connected with tracks leading out of the west side of the shop and in the case of Pit No. 4, the track is also continuous through the shop to a track leading out of the east side for the purpose of giving direct excess to a battery of lye vats. In addition, Pit No. 10, which is located on the axis of the old erecting shop, is connected with the track leading down the center of the old erecting bay.

Some Rearrangement Necessary

While, as stated above, a considerable part of the old shop and the equipment it contained were not disturbed by this enlargement plan, it is obvious that some changes would be necessary when a section 150 ft. long was cut out of the middle of it. What this involves will be better understood with a general knowledge of the arrangement of the departments in the old shop. The occupancy of the north bay, from east to west, included the machine tools for wheel, axle, tire, cylinder and rod work; the engine truck and driver brake shop; and the boiler shop.

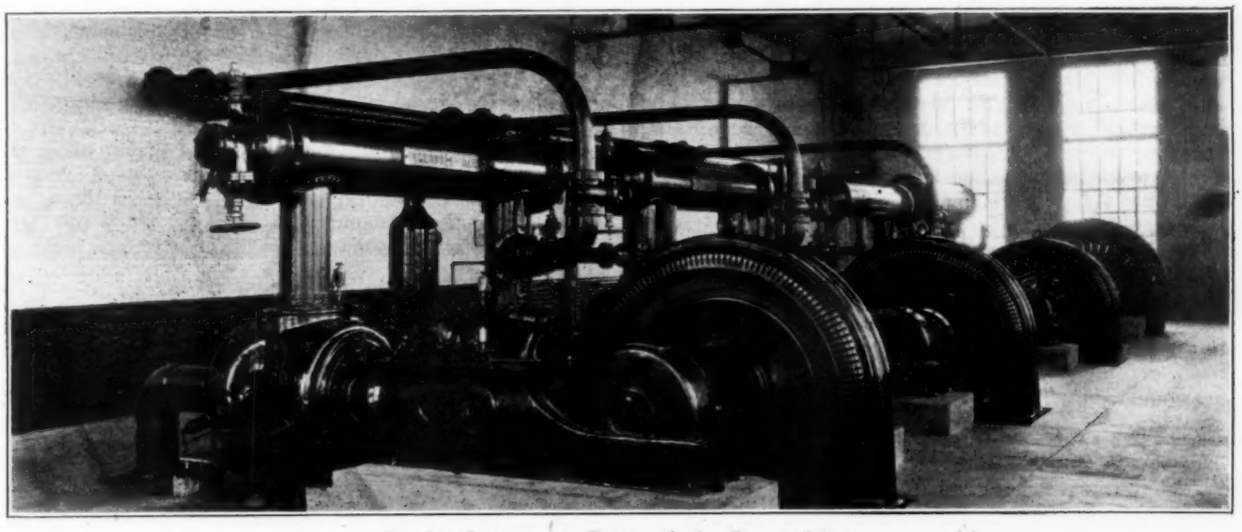


The Locomotive Repair Plant at Decatur Showing the New Facilities in Heavy Lines

The south bay, from east to west, was occupied respectively by a general machine shop, motion work shop, distributing tool room, pipe shop, an air compressor room, paint and carpenter shop, tank shop and flue shop. A balcony over the east half of the south bay was devoted to brass and air brake work, a sheet metal shop and the office of the shop superintendent.

The portion of the old shop that was removed to make room for the new shop was occupied by the cylinder and rod departments in the north bay and by the tool room on the ground floor of the south bay, while the portion of the balcony which was removed was occupied by the offices and the manufacturing tool room.

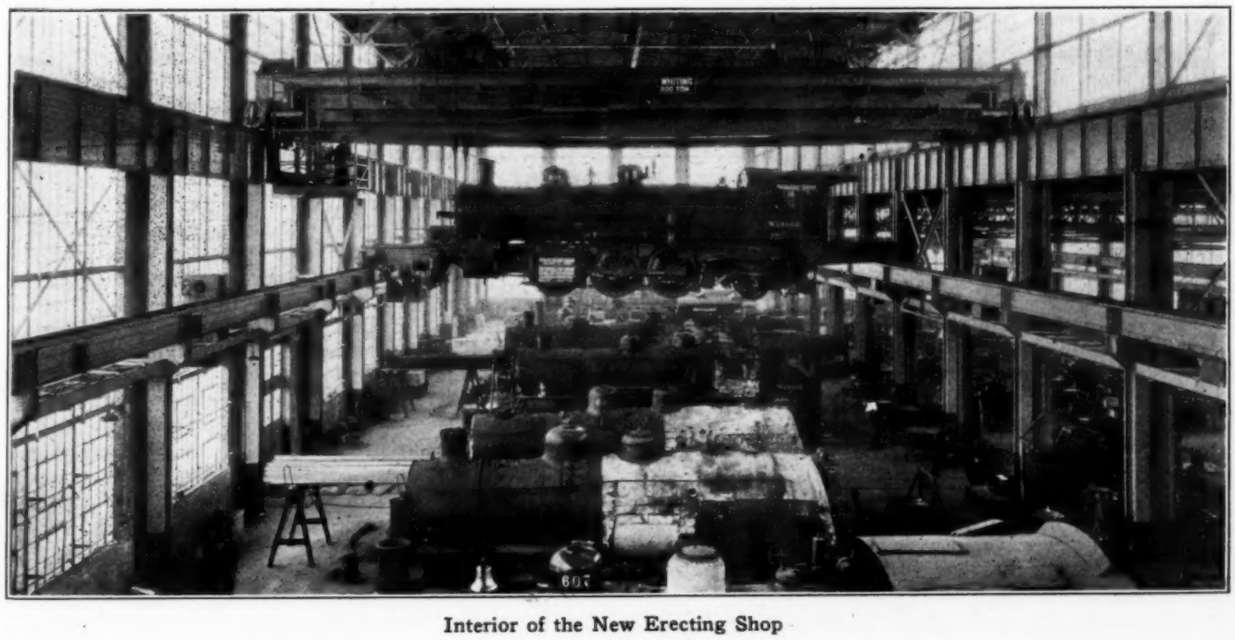
The new machinery bay afforded ample space for the accommodation of all machinery displaced in the old shop, as well as for practically all other machine tools with the exception of those in the wheel shop, which were allowed to remain in substantially their original location at the east end of the north bay, and the general manufacturing and reclamation shop of the stores department which occupied the east end of the south bay. This rearrangement of tools made it possible to move the manufacturing tool room from the balcony to approximately the same location on the ground floor, which change in turn permitted the shop superintendent's office to be moved further east on the balcony. Space was also made for a cab shop in the north bay just west of the new shop. Further changes in the old shop included the removal of all but the central tracks in the old erecting bay, except for a length of the north track used by the boiler shop. In addition, the flue work of the boiler shop was moved east far enough to permit space for two firing-up tracks at the west end with connections to the yard.



In the Compressor Room of the Power Plant

Method of Routing Repair Work

With this preliminary statement of the rearrangement of the shop facilities, the manner in which the use of the

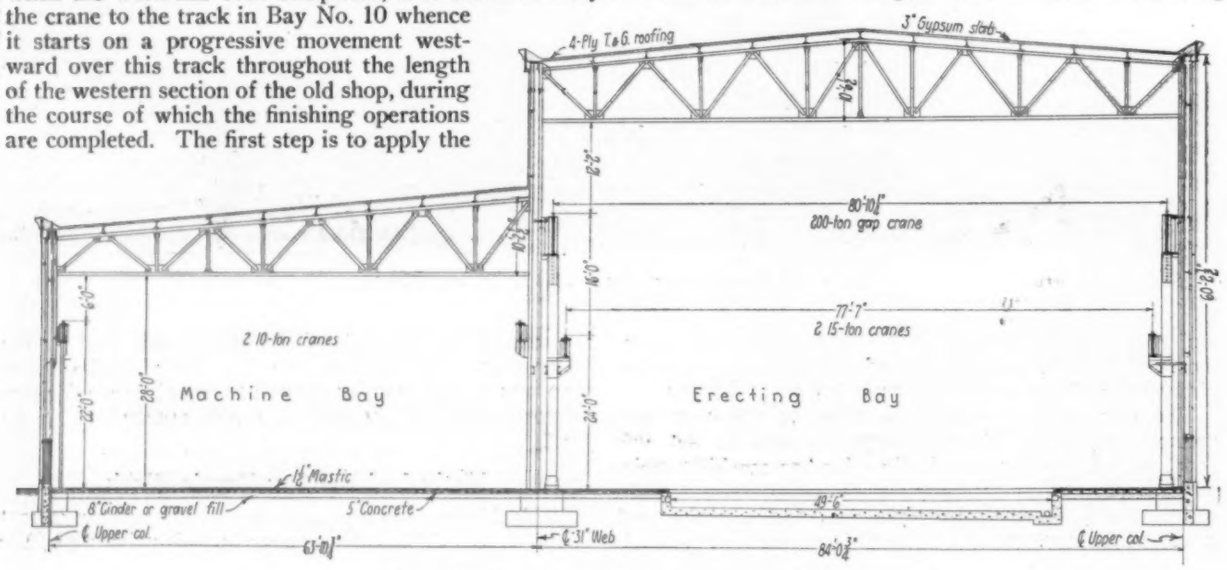


Interior of the New Erecting Shop

old and new portions of the shop have been co-ordinated in the repair of locomotives may be best understood by the following outline of the routing of engines through the shop.

The locomotives enter the shop over any one of the four tracks leading to Pits 1, 2, 3, and 4, which are used as stripping pits. The space in the side bay opposite these pits, which is not now occupied by machinery, is used for the storage of pipes, flues, headers, brakes and brake rigging, etc., as they are removed. Wheels are set out on the track in Bay 4 and are rolled out to the lye vats. After being cleaned they are rolled back and carried by a crane to the wheel shop which they enter at its east end and move progressively westward toward the new shop as the work on them is being carried out.

If any extensive boiler work is necessary, the boiler is placed on a flat car spotted on one of the adjacent stripping tracks and transferred over one of the outside tracks to the boiler shop in the west end of the old building. After the locomotive has been stripped, it is transferred by crane to one of the erection pits and when the work has been completed, it is transferred by the crane to the track in Bay No. 10 whence it starts on a progressive movement westward over this track throughout the length of the western section of the old shop, during the course of which the finishing operations are completed. The first step is to apply the brake and brake rigging. Next with the engine opposite the pipe shop, all piping is applied, after which it is advanced to the cab shop to receive its cab. Then as it is moved opposite the tank shop, the tender is set behind it and attached and during the course of all of these operations, all painting of the locomotive is done. The locomotive is then ready for testing and firing up on one of the three testing-out pits provided at the west end of the old shop.



Cross-Section of the New Locomotive Shop

New Shop of Modern Design

The new locomotive shop building conforms to current practice in structures of this class. It has a structural steel frame supporting roof trusses and crane girders, the walls being entirely of glass in Detroit Steel Product's steel sash, with the exception of brick base-walls 5 ft. 7 in. high and narrow pilasters at the columns. The roof sheathing consists of three-inch precast Gypsum tile resting on purlins and covered with Bird & Son's four-ply asphalt roofing. The floor is five inches of concrete covered with 1½ in. of Johns-Manville mastic. The erecting bay is 52 ft. 2 in. high to the under side of the roof truss and is equipped with two crane runways, one with top of rail 40 ft. above the floor for a 200-ton Whiting locomotive gap crane and the other with top of rail 24 ft. above the floor for two 15-ton Whiting messenger cranes. The machinery bay has a clear height of 28 ft. under the roof trusses and is equipped with two 10-ton Shaw cranes operating on a runway 22 ft. above the floor. The building is heated by Skinner unit heaters.

In the north end of the machinery bay, enclosed by wire netting partitions, is a small electric shop used for the repair of all electric equipment on the system. Small tool equipment occupies the portion of this bay immediately to the south of the electric shop, while the heavy machinery is concentrated to the north and south of a track leading into the machinery bay from the blacksmith shop.

Build New Power Plant

Another important unit of the improvement made at Decatur is a new power plant provided to house electrically-operated air compressors which replaced those removed from the air compressor room in the south bay of the old locomotive shop, as well as boilers for heating and hot water supply. The boiler room is 86 ft. 8 in. long by 45 ft. 11 in. wide and contains three 350-hp. Heine water-tube boilers with space for one additional unit. The boilers are equipped with Cokal automatic stokers, the hoppers of which are filled by hand. Ashes are removed by an American steam jet conveyor. The breaching leads to a radial brick chimney 7 ft. in inside diameter by 175 ft. high. In the compressor room, which is 40 ft. wide by 100 ft. long, space has been provided for five electrically-operated air compressors, four of which have been installed. Three of these are Ingersoll-Rand two-stage compressors having a capacity of 1,000 cu. ft. of free air per minute, while the fourth is a Worthington air compressor having a capacity of 2,000 cu. ft. of free air per minute, while the fourth is a General Electric synchronous motors operating on 440-volt, 60-cycle alternating current purchased from a local public utility company. The building has steel roof trusses supported on brick bearing walls with windows equipped with steel sash.

Another new unit is a sand blast house, a building 90 ft. long by 30 ft. wide with brick walls supporting steel roof trusses 20 ft. clear of the floor. Natural illumination is provided by four large steel sash windows on each

side, the roof construction being the same as in the new locomotive shop. Three large ventilators are provided at the ridge of the roof. There is a door at each end 15 ft. wide by 17 ft. high to permit the entrance of cars on a track laid on the longitudinal center line. Artificial illumination is provided by 10 floodlights so placed as to give adequate lighting on all parts of a car spotted in the building. Compressed air outlets are provided with hose connections for portable sanding machines. A further improvement is a new 10-ton Shaw crane of 36 ft. 2½ in. span installed on a runway 210 ft. long erected over the flue rattler and flue storage shed.

Two other additions to the plant were made necessary as a direct consequence of constructing the addition to the locomotive shop. While, as previously stated, this was placed in a position where it did not interfere with either the blacksmith shop or the storehouse, its construction did require the removal of a toilet building, 20 ft. by 60 ft., a fuel oil tank, and a bar and miscellaneous iron and steel storage, occupying the area between the blacksmith shop and the storeroom. For this reason it was necessary to provide a new locker and lavatory building of brick construction one-story high, 45 ft. wide by 89 ft. long. It is equipped with 810 steel lockers and 12 large Bradley wash fountains. A material storage yard was provided east of the blacksmith shop with concrete roadways and concrete island platforms to facilitate delivery operations. There is also an iron shed designed for the systematic storage of bars and other iron and steel with a shear located at one end so that material can be cut to the exact lengths required before delivery. Five new underground tanks were installed north of the blacksmith shop to provide storage for 26,000 gal. of oil.

A further improvement located at some distance from the locomotive shop is a new general office building for the motive power and car departments. This is a two-story and high-basement reinforced concrete building of attractive appearance and thoroughly modern appointments. It houses the general offices, drafting room and testing laboratory of the department.

The improvements at Decatur were carried out under the supervision of R. H. Howard, chief engineer of the Wabash, in collaboration with the motive power department under the general supervision of G. F. Hess, general superintendent of motive power, the unique scheme for enlarging the locomotive shop having been developed by the motive power department. The improvements were carried out under contract by the Foundation Company, New York City, which also prepared all detailed designs for all the improvement work.

Railroad Men Visit Purdue Test Laboratories

ANY doubt which may have existed regarding the keen and general interest of railroad men in the power brake and draft gear investigations now being conducted by the American Railway Association in test laboratories at Purdue University, Lafayette, Ind., was entirely dispelled by the large number of visitors on November 11, general inspection day. Two hundred and eighty-two representatives of 64 railroads and 53 other companies were in attendance, among them many of the foremost authorities in the country on power brake and draft gear design, construction and maintenance.

The growth in interest is indicated by the fact that at the first general inspection day, May 12, 1926, about 125 visitors were present at demonstration tests in the power brake research laboratory. This number was increased to 150 representatives of interested railroad and supply companies at the second inspection day, November 12, 1926. The attendance of 282 visitors on November 11, this year, is therefore convincing proof of the healthy growth in interest in the highly important investigations now being conducted by the American Railway Association at Purdue University.

The present status of the power brake investigation is as follows: Tests have been completed on the standard Westinghouse type K brake equipment and on the equipment submitted by the Automatic Straight Air Brake Company designed to meet the tentative specifications and requirements for power brakes for freight cars set up by the Interstate Commerce Commission. Tests are now being conducted on the equipment designed for this purpose but not recommended by the Westinghouse Air Brake Company. In the event that this equipment should be selected as the future standard for freight cars, the form of the equipment as submitted for test will be changed, consolidating many of the portions.

Part of the Group of 282 Railroad and Supply Men Who Visited the A. R. A. Test Laboratories at Purdue University

The new features, which it is claimed, are contained in the FC-5 freight car equipment, and which are not contained in the present standard freight car brake equipment, are as follows:

Protection against undesired quick action through the separation of the service and emergency parts.

Availability of emergency quick action at any time.

Emergency brake cylinder pressure, without quick action, will be secured when an over-reduction of about 12 lb. is made over that of a normal full service application.

Graduated (gradual) release.

Quick release and quick recharge; the auxiliary reservoir is

recharged first from such excess pressure as may be present in the maintaining reservoir and then from the brake pipe.

Ratio of brake cylinder pressure development to amount of brake pipe reduction 2½ to 1.

Maintenance of brake cylinder leakage within certain limits of pressure and time.

Compensation for variation in piston travel within certain limits.

Assurance of brake application behind closed angle cock.

The Westinghouse company has also submitted a locomotive brake equipment, which it is claimed is similar to the present standard 6-ET equipment, except that certain features necessary to the complete performance of the FC-5 freight car brake equipment have been added.

The additional features included in the FC-5 locomotive brake equipment are as follows:

Maintenance of brake pipe pressure against leakage within certain limits for graduated release operation by means of a maintaining valve.

Sustained capacity feed valve (Type M feed valve).

Extended reliability in initiating emergency quick action. (Relay brake pipe vent valve).

Timing feature for full release position of brake valve. (Charging choke in equalizing reservoir connection).

Unofficial tests of these brakes were conducted at Purdue on November 11 under the supervision of H. A. Johnson, director of research.

Draft Gears Tested

The draft gear tests, more recently instituted than the tests of the power brake equipment, are being carried out under the general direction of the A. R. A. draft gear committee and Dean A. A. Potter of Purdue University. The object of these tests, as outlined previously in these columns, is to develop on a uniform and comparable basis information regarding the performance of the various draft gears on the market, from which specifications can be prepared for the purchase of draft gears.

The gears for testing are secured from the stock of some railroad company or car builder. Ten gears of each type are taken for test. All ten gears are first subjected to a test in which the capacity is determined after the gear has been given a certain amount of preliminary work to condition it. Five of the gears are then subjected to a sturdiness test in which the strength of construction is studied. The remaining five gears are subjected to an endurance test in which is studied the ability of the gear to resist wear. Periodical examinations of the gear are made during the progress of the tests in order to detect changes as they occur.

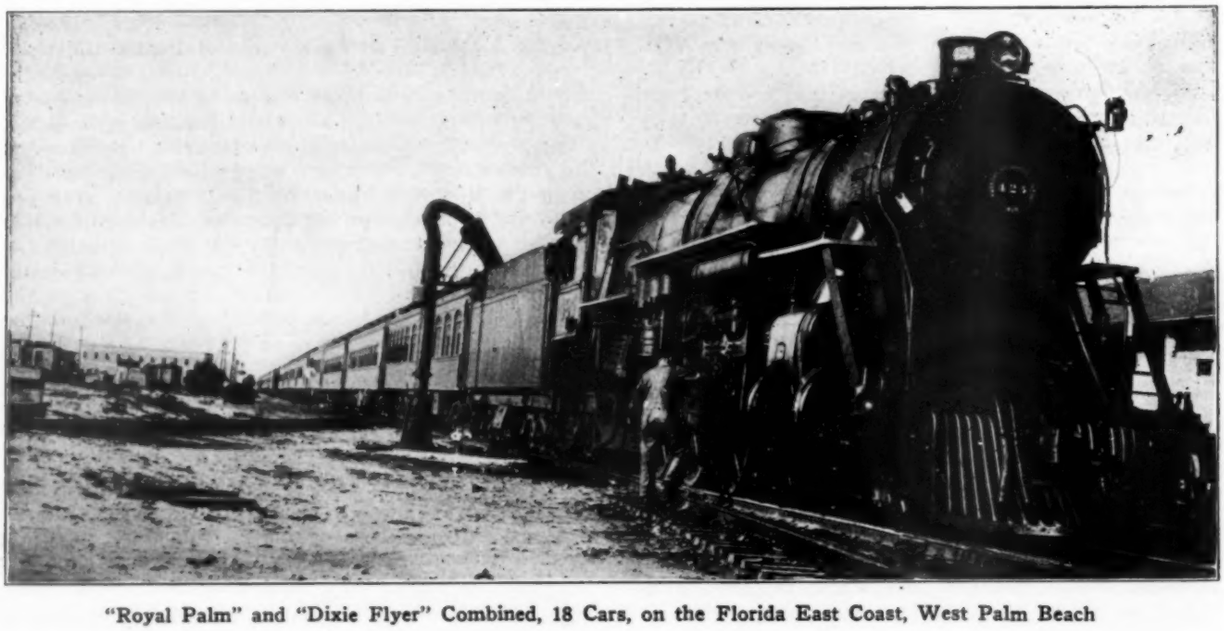
The drop test machine is so designed that either a 9,000-lb. tup or a 27,000-lb. tup may be used. Capacity determinations of two gears of each type are made with the 9,000-lb. tup, but all sturdiness and endurance tests are made with the 27,000-lb. tup. The machine may be operated with manual control, such as is necessary when establishing datum lines, or it may be operated with complete automatic control, in which it delivers a blow from whatever height of drop at which it is set, sets itself for the next blow at a greater height of drop, and stops with the tup just free of the gear.

The chronograph which draws a space-time curve of the tup when a drop is made is suspended entirely independent of the machine in order to tliminate vibrations due to the impact of the tup. It is also arranged so that it can be moved out of line when not in use. The chronograph curves are analyzed by means of a mechanical differentiator, the information giving a complete record of the gear performance during the blow.

For the purpose of demonstration, endurance tests were run November 11 on a Westinghouse type D-4 gear and a National gear, both of obsolete type. While on official tests a gear is not given more than 100,000 ft. lb. of work in one hour in order to prevent heating of the friction surfaces, no attempt was made in the demonstration to adhere to this limit, as the purpose was merely to show the machine in operation.

The heights of drop in the endurance test were arranged so that a gear received most blows at comparatively low drops. The test consisted of one blow at 1 in. free fall, one at 1 in. and one at 1¼ in., one at 1 in., one at 1¼ in., and one at 1½ in., proceeding according to this law until a free fall was reached which is ½ in. less than that necessary to close the gear.

The cycle was then started again at the beginning. In the regular tests after a gear has had two million foot pounds of energy applied in this way it is given a calibration and inspection. For demonstration of the chronograph, a calibration was made at the end of each hour. The use of the mechanical differentiator to analyze chronograph curves was also shown, as well as samples of the work done with this device.



"Royal Palm" and "Dixie Flyer" Combined, 18 Cars, on the Florida East Coast, West Palm Beach

Railway Business Association

Attendance over 1,500 *at banquet. Annual meeting discusses forecasting of railway traffic needs*

AN attendance of over 1,500 helped to make the annual dinner of the Railway Business Association, held at the Hotel Commodore, New York, on November 16, one of the most successful affairs of this kind in the association's history. This large assembly of railway supply manufacturers and their railroad guests was addressed by Fred W. Sargent, president of the Chicago & North Western, by Hiram Bingham, United States Senator from Connecticut, and by Neal O'Hara. Senator Bingham spoke on "The Far East." Mr. Sargent's paper, which was entitled "Are We Drifting Back Again?" appears on another page of the present issue.

The business session in the morning included a forum on "Future Traffic Growth and Railway Facility Requirements." Addresses were made by Virgil Jordan, chief economist of the National Industrial Conference Board, and by Frank W. Noxon, secretary of the association. Mr. Noxon's paper, which bore the title "Traffic Forecasts, Facility Estimates and Rate Regulation" was a discussion of the letter recently addressed to members of the association by President Alba B. Johnson on the subject of Railway Capital Programs and of the letter recently addressed to the association by John J. Esch, chairman of the Interstate Commerce Commission, on the commission's regulatory policy. President Johnson's letter appeared in the *Railway Age* of November 5, page 903, while the statement of Commissioner Esch was given in the *Railway Age* of November 12, page 936.

Virgil Jordan asked the question "Are Business Booms Extinct?" and more explicitly discussed the problem of forecasting railroad requirements in the light of future traffic demands.

"Conditions in the United States," he said, "are favorable for an unprecedented expansion of business which may make 1925 and 1926 look like a depression by comparison and which, if it comes, is likely to strain our transportation facilities and credit resources to the limit, and put the self-control of business men and the powers of the Federal Reserve System to a real test to prevent serious inflation and subsequent slump."

"There has been no real boom in general business in this country since 1923," Mr. Jordan said, "The enormous flow of idle funds into the stock market and into foreign securities, and the lengths to which the banks have been driven to increase their earning assets by security loans, real estate investments and instalment financing are sufficient indications of the fact that real business has been marking time or rather moving around in circles during the past few years. In a few lines, such as the security turnover, real estate transfers, the production and consumption of silk, cigarettes, automobiles and gasoline, sales of diamonds, writing of insurance, etc., there has been spectacular activity which has turned the heads of a good many people. There has been a steady and restless shifting of activity from one field to another, and even from one concern to another in the same field, some getting a bite of the apple of prosperity one year, and others the next. But for most of the little fellows there hasn't been much more than the core left after the big ones have had their bite.

"If there were any trustworthy way of measuring the general volume of business it would probably show little, if any, more than the normal rate of growth during the past five years. Business cannot live by General Motors alone, or by Fords either. We should have saved some of the Hosannas and Glorias that have been wasted on our rather spotty prosperity of recent years till we should see the real thing, with boots and shoes, textiles, coal, iron and steel, and the farmer and the little business man on the band wagon. Many a business man reading the ecstatic statistics that have been prevalent till lately has said, if this is prosperity, spare me any more of it. It has been fine for the wage worker, the salaried man, the large, flexible manufacturing concern, the chain stores, public utilities (gas, electric light and power companies) and everyone who can enjoy riding downhill on declining price indexes; but for the debtor, the jobber, the wholesaler and the small competitive businesses it has not been so pleasant. Most of them have learned to economize till they owe themselves a lot of money, and if they get a chance they are going to blow it in recklessly for a change.

"Of course, in this period of penurious and cautious prosperity business has achieved in many respects a greater self control and a greater stability. The business machine has become much more flexible and adjustable to changes than it was before the war, both in its organizations and methods, and this increased flexibility is the greatest guarantee against breakdown and smashup. But while it makes any serious depression more unlikely and difficult than formerly, it affords no safeguard against old-fashioned runaway markets and sudden booms. In fact, the tremendous reservoir of liquid capital, the flexible labor force, the keen, aggressive professional management, the elastic forms of industrial and business organization and the unrestrained spending habits of our people which we have developed in recent years all provide the basis for industrial expansion difficult to control if it once starts.

How Could a Boom Start?

"All that is needed to start a real boom of this sort, which under existing conditions might easily make all our earlier booms pale into insignificance, is a reassuring outcome of the national election in 1928, continued improvement in agricultural conditions, and a continuation of the upturn in prices that has tended to show itself in recent months. If such a favorable combination of circumstances should set the ball rolling, it will remain to be seen whether American business really learned the lesson of moderation in 1920 and whether our banking system can really exercise that control which is imputed to it or demanded of it by many people.

"In planning our industrial, transportation and trade programs for the future it is sound policy to count on the most intensive use of existing facilities and to avoid a capacity greatly in excess of possible demands, but it would be unwise and uneconomic to proceed on the assumption that business is destined to go along indefinitely at the present rate. It is just as necessary to prepare for prosperity as it is for hard times."

Report of Conference Committee

There was read at the business session a report by a conference committee which had been requested to study the general question of future traffic growth and railway facility requirements. The committee had eight members and its chairman was W. E. Sharp of the Grip Nut

Company. Its report discussed chiefly the problem of forecasting and said in part:

It seems obvious that everyone who carries responsibility for transportation preparedness should adopt and maintain some method of estimating future business volume and railway facility needs. We judge that neither the railway systems collectively nor the Interstate Commerce Commission is prepared to furnish forecasts upon which they base programs for additions and betterments on the one hand or revenue adjustments on the other.

We recommend that the discussion proceed by seeking answers to the questions set forth below. Upon two of these, as stated, papers are scheduled for delivery here today. Others are reserved for further study and report.

1. *Are business booms extinct?* Discussed by Mr. Jordan.

2. *Can the Interstate Commerce Commission regulate rates and revenue in accordance with traffic forecasts and facility estimates?* Discussed by Mr. Noxon.

3. *Are long-range national business forecasts feasible?*

For transportation purposes it is indispensable to make forecasting national. Car supply, though company-owned, is in effect a national pool and nationally distributed. In its adjustment of rates to the revenue levels deemed by it necessary for adequate facilities and satisfactory service, the Interstate Commerce Commission must have the national system in mind.

It is equally essential to look ahead a substantial distance. This is especially true with respect to structures built to accommodate future expansion. But it is true also of all additions and improvements, which if planned several years in advance can be accomplished to the best advantage in something like equal annual instalments.

Can such estimates be applied to the sum total of national activities? It has already been remarked that the railways collectively and the Interstate Commerce Commission do not publish forecasts and there seem to have been informal efforts on their behalf which indicate the difficulty. Theoretically on the other hand it would appear as if the railways as a whole and their federal regulators would be on firmer ground than individual railways, farmers, or business concerns. Depression in one industry is offset by activity in another, the general course of business may tend upward and the railways enjoy at least the prosperity of the average. Few if any kinds of activity, therefore, offer so favorable a basis for forecasting as the railways as a whole.

There are lines of business, notably the telephone, which can and do use in their capital budgets long-range national forecasts. We suggest a study of these.

4. *What is the proper method of computing current margin of facilities over the last peak load?*

An occasion arose last month for the use of such a method. The American Railway Association in the newspapers of October 26 reported on equipment owned, in use, stored, or in bad order. President Johnson in a statement to members, under the title, "Railway Capital Programs," analyzed the figures. We believe his method will serve as a basis of study to see whether it can be improved upon.

It is worth constantly repeating that what is called a "car shortage" may be the result of shortage in other departments, since it is efficiency all along the line that gives the shipper his car when he needs it and promptly delivers it to the consignee.

5. *How can we measure the preparedness for a few months ahead which our railways can reasonably be expected to maintain?*

Mr. Johnson states what the reserve would have been at this year's peak if traffic had equalled the last previous high point. Then he cites the increase in car loading from one recent high mark to its successor, occurring within a year; and supposing such an increase per cent to be coming again, shows at what point the present equipment would be exhausted. Some individual roads apply one or another forecasting method to their own immediate programs both capital and maintenance. We believe that comparison of these several methods will repay the effort.

6. *Can railways make longer programs?*

The question has several phases:

(a) The divergence in present practice among the several roads.

(b) The tendency to alternate rolling-stock with way-and-structures programs.

(c) Differences of attitude toward the stabilization of labor.

(d) The depressing influence of hand-to-mouth buying upon industry and hence upon railway prosperity.

(e) Discouragement in the railway supply industry due to suspended purchases and to railway shop manufacture.

These phases are under more or less informal discussion. We think that each of them could be profitably made the subject of conference between manufacturers and railway officials.

Resolutions

The meeting adopted the following resolutions:

I. Transportation Satisfactory. Every test since 1920 has proved the wisdom of returning our railways to the owners. By organizing effective co-operation shippers have shown zeal for the success of that policy and by general consent they testify that transportation excels all previous standards. Agriculture, industry and commerce should unite to dissuade Congress from any experiments which might endanger the continuance of rail transportation provided, maintained, developed and operated by individual citizens.

II. Five Year Budgets. Recognizing collective as well as individual responsibility for preparedness, the railways report facilities and performance, capital and maintenance expenditures and announce estimates for the forthcoming months. We renew our suggestions that capital and maintenance estimates by railway companies and by the American Railway Association should cover five years. In financing this would promote foresight and hence thrift. It would tend to systematize purchases more evenly over the years, enabling equipment and supply manufacturers to operate more economically, thus favorably affecting the roads. Industrial employment and general prosperity would be more stable, lessening the fluctuation in railway earnings. Capital requirements would be more vividly and persistently in view, a constant reminder of income as a factcr in the investment inflow, and so a steady influence upon railway officials, shippers and regulatory bodies in the consideration of rate changes.

III. Initiative With The Commission. The Transportation Act places the duty of initiating rate adjustments for adequacy of railway revenue upon the Interstate Commerce Commission. The commission should discharge this responsibility. This involves observation of traffic trends, of facility needs, of capital requirements and supply. Some of this research the railroads alone can perform. The statutory duty of the commission implies inquiry for such reports. Some of it can be done only by the commission. The expense must be met. If funds are lacking they should be provided for in the budget. Planning and supervision of such observation is a foremost first-hand task for the commission. If its members are overburdened with lesser tasks, relief should be sought and given.

IV. Political Pressure. In the performance of their duties, which are quasi-judicial, Interstate Commerce Commissioners should be protected, like the courts, against political pressure. Incumbents should have reason for confidence in reappointment during health and satisfactory service. Appointees should represent no geographical or occupational interest and no faction or opinion, but should be selected for individual fitness. In considering confirmation of nominees, senators should abstain from disclosure of opinions by which they desire commissioners to be guided.

V. A Rule of Rate Making Indispensable. We see no present occasion for amending Section 15a of the Transportation Act, the rule of rate making, except, if the recapture clause, which we oppose, must remain in the law, to make five years instead of one the period for computing recapturable income. If further changes in that Section are pressed to the point of serious consideration by Congress the Railway Business Association will labor to preserve a provision requiring the Interstate Commerce Commission so to adjust rates that carriers may have opportunity to earn net railway operating income in such amount as in the judgment of the commission will enable them to meet the transportation needs of the country by adequate enlargement and progressive improvement of their facilities.

VI. Unifications. We reiterate our opposition to compulsion in railway unifications. Corporate groupings should come if at all in the course of natural economic development.

VII. Federal Control of Industry. We oppose legislation by Congress for control of the coal industry. There is no monopoly in coal and no prospect of any. The coal industry is endeavoring to solve its own problems in relation to the public and to labor. Steady progress has been made toward stabilization of labor, which affects stability and moderation in prices. We believe this will continue. The public interest in a dependable supply of coal at fair and steady prices is sufficiently protected in existing conditions by regulation now in effect. We fear that the assumption of further governmental functions in connection with the coal industry will lead first to governmental fixing of coal prices and subsequently to governmental control in manufacturing and other industries.

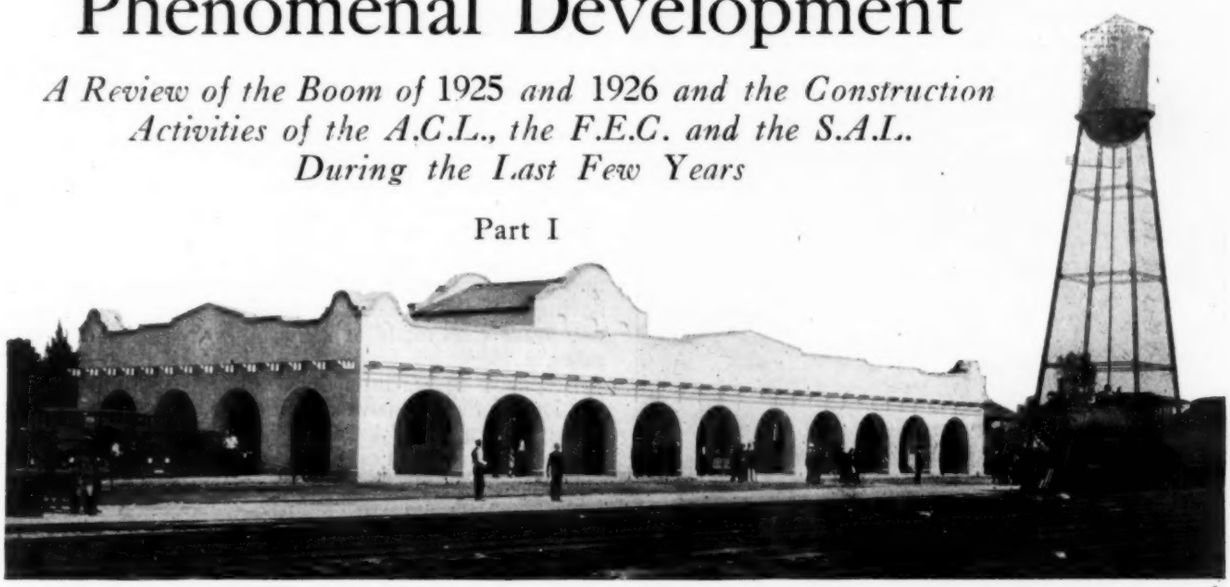
Election of Officers

Officers were elected as follows: President, Alba B. Johnson, Philadelphia; vice-presidents, M. G. Truman and F. N. Bard, Chicago, W. L. Conwell and F. F. Fitzpatrick, New York, George A. Martin, Cleveland, Harry Scullin, St. Louis, and Charles J. Graham, Pittsburgh; treasurer, P. Harvey Middleton.

Florida Roads Have Experienced a Phenomenal Development

A Review of the Boom of 1925 *and* 1926 *and the Construction Activities of the A.C.L., the F.E.C. and the S.A.L. During the Last Few Years*

Part I



The Attractive New Passenger Station of the Atlantic Coast Line at Fort Myers, Fla.

PRACTICALLY every one knows of the phenomenal development of Florida during the past few years, and more particularly of the "boom" of 1925 and 1926, but relatively few are acquainted with, or appreciate the large part played by the railroads of Florida in bringing about and making possible this intensive activity within the state, or the part they will continue to play in the further development of that section of the country.

Although leading the way for years in promoting a territory known primarily for its winter resorts, and in a lesser way for its fruit production, the railways, like others, failed to anticipate the proportions of the boom that finally came to Florida, and the roads were not prepared for it. Serious congestion was the result for some time, but there have been few instances in the history of the railroads of the country where more effective measures were adopted, and where greater effort was expended to meet a situation of so large a scope.

In studying the remarkable strides made by the railroads in Florida, it is well to review the operating and construction activities of the three principal roads serving the state—the Atlantic Coast Line, the Florida East Coast and the Seaboard Air Line—together with their subsidiary lines, considering each road as a whole and including its lines outside as well as within the state. This is essential, for while millions have been spent for improvements within the state itself, equally large sums in proportion have been expended by some of the roads on their lines outside of the state for the sole purpose of increasing their ability to handle the Florida business.

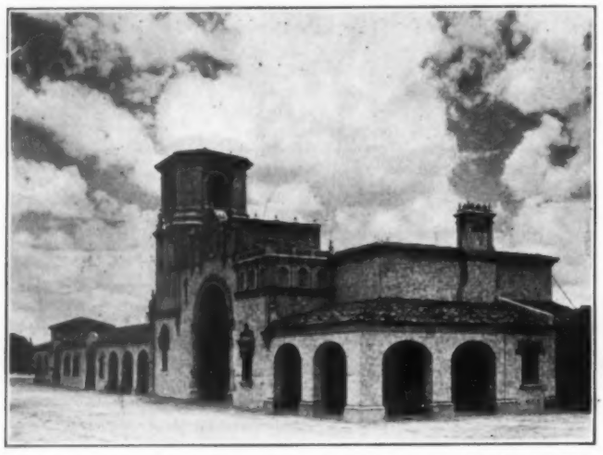
Traffic, Earnings and Expenditures Mount

How great the increase in business handled by the Florida roads has been is indicated by the fact that in 1925 and 1926 their freight transportation output equaled 8,718,033,713 and 9,428,826,408 revenue ton-miles as compared with 4,758,708,220 and 5,704,240,597

On the New Double-Track Moultrie Cut-off of the Florida East Coast Less Than a Year After It Was Put in Service

ton-miles in 1921 and 1922, the first two years after the roads emerged from federal control. In addition to an increase in their freight business of almost 100 per cent within this short interval of time, their passenger business mounted rapidly in spite of all the other competing agencies which served that territory. In 1925 and 1926 the revenue passenger miles of these roads amounted to 1,268,898,442 and 1,184,830,573, respectively, as compared with 866,156,088 and 817,328,080 revenue passenger miles respectively in 1921 and 1922.

The combined operating expenses of the three principal roads serving Florida rose from around $100,000,000 in 1921 and 1922 to over $140,000,000 in 1926, while their combined net operating income increased from around $7,000,000 in 1921 to over $36,000,000 in 1925 and over $34,000,000 in 1926.



Seaboard Air Line Passenger Station West Palm Beach, Florida

In the two earlier years referred to, when the roads were recovering from the effects of government control, addition and betterment work was just getting under way. During these years, respectively, the Coast Line, the East Coast and the Seaboard together invested $4,959,671 and $3,188,207 in roadway and $7,188,008 and $5,600,331 in additions and betterments of equipment. Increasing steadily throughout the following years, except in two or three instances in the case of expenditures for equipment on the individual roads, the total expenditures of the three Florida roads for additions and betterments to roadway and structures and for new lines, reached a total of $28,101,326 in 1925 and of $43,299,768 in 1926, while equipment purchases and betterments also soared to a total of $14,338,292 in 1925 and $23,177,817 in 1926.*

During 1927, as was expected, the entire activities of the Florida roads have slackened somewhat. This is evidenced by a comparison of their operating revenues during the first seven months of this year with those earned during the first seven months of 1926. During this period of 1927 the total operating revenues of the A.C.L., the F.E.C. and the S.A.L. amounted to $101,365,302, whereas during the same period of 1926 they reached $119,734,436 The net operating income of the Florida roads during the first seven months of 1927 also declined as compared with the same period of 1926, amounting to only $16,326,019 in 1927, while in 1926 it amounted to a total of $22,888,690. Figures showing operating revenues and expenses, net operating income, expenditures for additions and betterments, and other pertinent data for the A.C.L., the F.E.C. and the S.A.L. are given for the years 1920 through 1926, in the accompanying tables.

* See note on bottom of table on page 980.

New Construction Has Been Most Extensive

The activity of the railroads everywhere in Florida, as expressed in these figures, is apparent. New lines have been constructed, opening up new territory and shortening rail routes within the state, the mileage of these lines totaling 258.30 in 1924, 99.03 in 1925, and 232.77 in 1926, and leading by far the new line construction in other states with the single exception of Texas in which 96.72 miles of line was constructed in 1925 and 242.23 miles in 1926. Second track construction also proceeded at a rapid rate in Florida, this state having led others in this class of work during the past two years with totals of 236.5 miles in 1925 and 222.4 miles in 1926.

Extensive as has been this work, it represents only a portion of the intensive activities of the Florida roads during the past few years in their attempt to enlarge and improve their facilities serving the state and to foster and keep pace with the phenomenal developments which have taken place in the industrial and commercial life of the state itself. Passing tracks and yards have been extended an denlarged; existing lines have been strengthened almost out of face with more substantial ballast, heavier rail, and with new and heavier bridges; shops and engine terminals throughout the state have been enlarged and modernized, and extensive new facilities of this character have been constructed in several instances; new passenger and freight stations have been constructed; water service facilities have been enlarged; and several hundred miles of automatic block signals have been installed on the lines entering and serving Florida to increase their capacity and to expedite the movement of freight and passenger business into and out of the state.

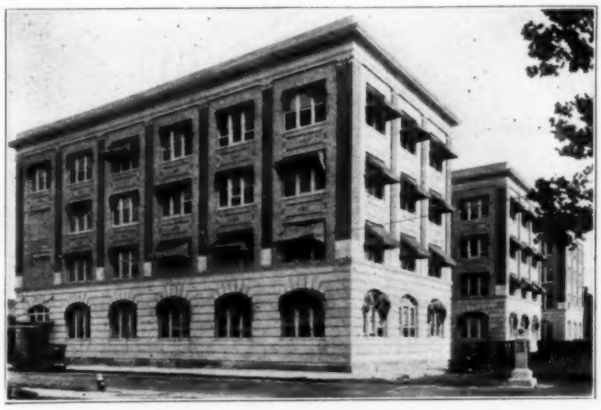
Right-of-Way Cleared for the New Perry-Monticello Cut-off of the Atlantic Coast Line

Development of Florida Was Gradual Until 1920

In order to appreciate better the necessity for the vast improvement programs which have been carried out by the railroads of Florida, it is essential that a clear understanding first be had of the conditions which have prevailed within the state during the past few years, both with respect to the state itself and to the railroads. For a number of years prior to 1920, Florida had been pro-

gressing gradually with substantial development along practically all lines of endeavor. Increasing numbers of new people were coming into the state yearly, towns and winter resorts were growing and improving, and new areas were being reclaimed and set out in citrus fruits and garden products. During these years, and those immediately following, traffic to and from Florida moved on a well defined seasonal schedule, passing through the limited gateways to the North, of which Jacksonville is the largest and most important.

Citrus fruit and vegetables usually began to move to market in October, continuing until about the first of May. Heavy southbound passenger business began in the fall and reached its height by the latter part of February, only to shift at that time to the heavy movement of passengers northward until the latter part of April. Thus the busy season for the railroads serving Florida was from October to May, the remainder of the year being marked by light business of all kinds, with train service reduced to a minimum. Such was the traffic situation in Florida until 1920, and in fact, to a considerable extent until the Spring of 1925, in spite of



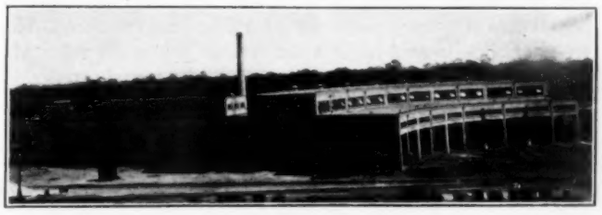
New General Office Building of the Florida East Coast at St. Augustine

the increasing activity which took place within the state within these years.

1920 Witnessed More Than Normal Activity

The first abnormal activity in Florida became apparent in 1920. During that year a considerable number of new people came into the state, a growing interest in real estate became apparent, and an unusually large amount of building construction was begun or planned, particularly in the vicinities of Miami, West Palm Beach, and points to the north along the east coast. This activity marked the beginning of what later came to be known as the "boom period."

During the years immediately succeeding 1920, the activities manifest in that year continued to increase. Real estate became more and more active; large hotels, apartment buildings, office buildings, and an increasing number of houses were constructed; bridges and causeways were built or rebuilt over streams, bays and tidewater lagoons; cities and towns began and carried out extensive municipal improvements; industry expanded, requiring new and enlarged plants; and at the same time a large amount of highway construction was being carried on. Gradually this growing activity, with its element of speculation fever, extended to the west coast of Florida, gaining momentum each year until 1924, when it spread rapidly over the entire state, resulting in still increased construction and widespread speculation in real estate. During all of this time the railroads were at work, as outlined later, investing millions of dollars in new equipment and in the construction of new and improved roadway and terminal facilities, and making every effort to keep pace with the development of their



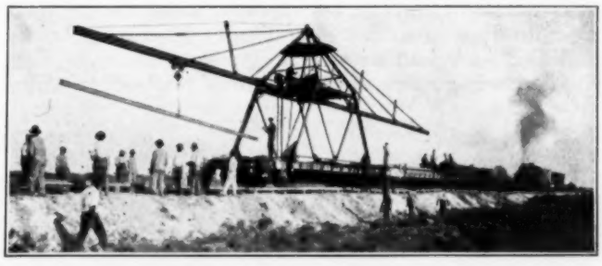
New Engine House of the Florida East Coast at New Symrna, Fla.

territory and to meet the increasing demand for transportation.

Boom Strikes With Full Force in 1925

Surprising as it may be, throughout all of this increasing activity, the seasonal routine of traffic into and out of Florida continued along very definite lines, except that the volume of traffic increased rapidly from year to year. In the spring of 1925, however, the normal lull did not occur. People from every section of the country poured into the state, giving added impetus to the demand for hotels, houses and every kind of public utility. Again construction increased, bringing with it an inbound freight traffic which continued to grow, until during the fall of 1925, when it reached its peak, it was far in excess of the record-breaking figures of 1924 and the early part of 1925. Enormous orders placed by merchants in Florida, the heavy movement of highway and general building materials, coupled with one of the largest crops in the history of the state and an unprecedented passenger traffic, placed upon the Florida carriers a burden which became increasingly difficult to carry.

Adding to the difficulties of handling vast quantities of supplies and materials for the use of bona fide construction agents, was the wild speculation in all classes of commodities. Brokers and dealers everywhere were ordering supplies far in excess of actual requirements. Train loads of materials were ordered without advance



Laying Track on the Florida, Western & Northern, the Miami Extension of the Seaboard Air Line

notice to the carriers and were often shipped into the state without destination, changing hands many times while en route and often reaching a destination finally with inadequate or no service tracks, and without unloading or storage facilities. This caused consignees to leave freight in thousands of cars at points all over the state, occupying every available foot of track, tying up cars urgently needed and practically choking the movement of traffic.

Supplementing the difficulties arising from the heavy

inbound traffic of materials and supplies, were the necessity for the movement of thousands of empty refrigerator cars into the state to be loaded with perishables, the movement of which was of paramount importance; the handling of a record passenger traffic; labor shortages for unloading shipments and for carrying on railroad construction; and of considerable importance, bad weather, floods and high water which prevailed throughout large sections of the southeast during January of Florida was in full service and seriously in demand. This, in turn, resulted in the damming up of traffic at every gateway and junction point, where yards were crowded to capacity, making it physically impossible for the roads to maintain anything near normal service.

With this condition prevailing, and with further congestion in view as demands for additional service increased, it became apparent that the only solution of the problem was for the roads to refuse further shipments

Atlantic Coast Line

Year	Total Operating Revenue	Total Operating Expenses	Net Operating Revenue	Net Operating Income	Revenue Ton Miles	Revenue Passenger Miles	* A & B Roadway and New Lines	* A & B Equipment
1920	$25,304,074	$21,086,744	$4,217,330	$1,380,454	3,290,282,723	638,557,646	$1,888,551	$ 497,989
1921	66,730,768	58,005,833	8,724,935	4,192,835	2,479,340,135	481,453,142	1,900,297	6,545,325
1922	70,823,345	52,033,448	18,789,897	14,416,370	3,031,173,450	460,796,676	1,592,504	1,662,995
1923	80,882,311	59,868,428	21,013,882	15,496,609	3,712,154,470	518,448,406	4,442,551	13,280,267
1924	81,785,921	60,335,126	21,450,796	15,179,185	3,763,630,965	512,238,044	5,206,284	2,704,013
1925	93,997,698	64,966,121	29,031,576	20,184,546	4,440,360,680	637,492,580	7,449,976	4,023,187
1926	97,086,517	70,701,770	26,384,747	17,585,808	4,751,444,366	610,963,441	10,250,856	9,513,087

Florida East Coast

Year	Total Operating Revenue	Total Operating Expenses	Net Operating Revenue	Net Operating Income	Revenue Ton Miles	Revenue Passenger Miles	* A & B Roadway and New Lines	* A & B Equipment
1920	$13,701,191	$10,749,369	$2,951,822	$1,826,169	591,272,509	126,964,030	$ 71,644	$ 558,395
1921	13,579,109	11,218,635	2,360,474	981,723	420,862,937	104,191,894	2,291,610	621,964
1922	13,427,625	9,431,825	3,995,800	2,699,262	422,728,890	100,366,132	707,210	577,067
1923	16,023,998	10,771,330	5,252,668	3,165,911	556,630,650	122,431,351	1,555,879	1,431,951
1924	20,106,910	13,270,096	6,836,815	4,411,515	728,361,701	154,561,740	5,126,116	3,588,999
1925	29,132,738	19,927,851	9,204,887	5,337,049	978,744,175	260,801,308	16,918,789	4,086,753
1926	29,427,460	20,406,598	9,020,861	5,167,479	1,040,326,309	228,844,613	26,840,249	3,490,218

Seaboard Air Line

Year	Total Operating Revenue	Total Operating Expenses	Net Operating Revenue	Net Operating Income	Revenue Ton Miles	Revenue Passenger Miles	* A & B Roadway and New Lines	* A & B Equipment
1920	$49,265,030	$48,512,802	$ 752,227	$2,645,854	2,533,255,969	373,868,397	$ 795,159	$ 178,594
1921	42,844,933	37,024,801	5,820,132	2,062,372	1,858,505,148	280,511,052	767,764	—10,719
1922	45,679,048	36,222,884	9,456,164	4,230,569	2,250,338,257	256,165,272	888,493	3,360,269
1923	52,249,110	40,342,259	11,906,851	7,957,963	2,627,222,247	292,740,830	1,543,358	6,424,206
1924	53,384,173	41,387,634	11,996,539	9,013,514	2,782,272,547	278,360,026	2,258,445	2,671,731
1925	62,864,711	46,733,364	16,131,347	10,822,731	3,298,928,858	370,604,555	3,732,561	6,228,352
1926	67,024,854	49,253,002	17,771,852	12,014,178	3,637,055,733	345,022,519	6,208,663	10,174,512

* The last two columns in these tables, "A & B Roadway and New Lines," and "A & B Equipment" represent net additions and betterments to property investment after adjustments and retirements. In the case of the Seaboard Air Line the figures given do not include a complete statement of the large expenditures for new lines built by separate companies, in some instances later leased by the Seaboard, or the complete capital expenditures incident to the rehabilitation of certain acquired properties.

Revenues, Expenses and Business Handled by the Three Florida Roads, 1920 Through 1926

1925, and in Florida particularly, during the latter part of both 1924 and 1925.

Speculative Buying and Resulting Congestion Lead to Embargo

Despite all efforts of the carriers, which during these years had put in service several hundred miles of tracks, and had exercised every emergency measure to keep traffic moving, every available foot of track space within into the state until the cars on hand could be unloaded and moved out to make room for additional cars. Accordingly, all of the roads joined in an embargo, issued on October 29, 1925, to take effect two days later. This embargo excepted only foodstuffs, fuel, a few other essential commodities, and materials required for the marketing of fruit and other perishable produce. At first the embargo applied only to carload shipments, but shortly it was extended to l.c.l. freight on all roads ex-

The New 1625-Ft. Double-Track Steel Viaduct Built by the Florida East Coast at Roseland, Fla.

cept the Atlantic Coast Line, this class of shipments having increased practically 100 per cent within the first month following the embargo on carload shipments.

When the initial embargo was announced, between 3,000 and 4,000 cars were tied up at Jacksonville and from 8,000 to 10,000 cars were being held at points between Washington, Cincinnati, St. Louis and New Orleans, awaiting movement into Florida. During the 48-hour interval between the announcement of the embargo and the time it was to take effect, thousands of additional carload shipments were forced upon the carriers and held at points north of Jacksonville, adding materially to the congestion already prevailing.

When the embargo was put into effect, every effort was made to relieve the immediate situation. Each of the roads established permit bureaus to provide for the movement of shipments urgently needed to those who could unload them promptly; additional experienced traffic men were taken into the state to assist in breaking the jam; transportation forces were increased on all lines leading to Florida; and the entire organizations of the roads worked at top speed under severe pressure to clear up the situation. Such measures, together with the co-operation of the civic organizations in Florida, and the formation of the Florida division of the Southeast Shippers' Advisory Board in the early part of December, 1925, to bring about closer co-operation between shippers and the carriers, led to the breaking of the Florida traffic jam, clearing the way for lifting the embargo. So effective were the measures adopted that the first modification of the embargo was put in effect on February 22, 1926, permitting the carload shipment of practically all commodities into the state, with the exception of a selected list of construction materials and in some instances of automobiles, trucks and household furniture. By April 15, the situation had so improved that a further modification was made in the embargo, and effective May 15, the state-wide embargo was entirely lifted. Indicative of the situation which brought about the embargo and necessitated its being kept in force for so long a time, is the fact that during the first three months of 1926, carload traffic to Florida showed an increase of 102.9 per cent over the record-breaking shipments during the same period of 1924, and 58.5 per cent over the shipments in the same period of 1925.

To review the rapidly increasing and unparalleled demands made on the roads serving Florida, and the correspondingly difficult problems which were encountered by the roads in meeting the situation, is only half of a most important story. Back of it all, and of equal importance and interest, has been the stimulus given to the state by the railroads through their ever increasing facilities, and more particularly, through the extensive construction projects which they have carried out and pushed to the utmost to relieve the unprecedented conditions prevailing during the boom period. A summary of the work completed in Florida during these years and some of the methods used and the problems encountered in carrying it out will be included in Part II of this article which will appear in a subsequent issue.

FRANK H. ALFRED, president of the Pere Marquette, in a large poster calling upon "the State," if it cannot educate the careless motorist to be careful, to withdraw from him the privileges of the highway, says that of 19 accidents at highway crossings on his road in the month of October, it was the train, not the automobile that was hit; that is to say, the automobile ran into the side of the train. In one instance, a motorist deliberately drove in front of a train. In the 19 cases there were two fatal injuries and 11 less serious ones. Most of the automobiles were old or of little value, leading to the inference that the care exercised by drivers is proportionate to the car value.

Rapid Restoration of New England Railroads

THE railroads of New England which had to suspend the operation of trains on hundreds of miles of their lines on November 4 and 5, by reason of unprecedented floods (as reported in the *Railway Age* last week, page 945) have made phenomenal progress in the completion of temporary roadbeds and bridges, and some sections of ruined track have been opened in less time than was anticipated. The two lines of heaviest traffic which were affected were those of the Boston & Maine between Boston and the Hudson river and the Boston & Albany between the same termini; these are now open, though with the handicap of short sections of single track. The Central Vermont, however, will not be out of the woods for several days.

Central Vermont

The Central Vermont with serious destruction spread over a distance of 94 miles from White River Junction, northward to Essex Junction, is still unable to make more than rough estimate, of the condition of things or of the amount of the losses in that territory. Seven steel bridges are out, and the roadbed, according to a very conservative estimate, is 25 per cent destroyed. The survey of the situation has been slow and difficult because of almost impossible highway communication and extensive interruption of telephone and telegraph lines.

Outside of this hundred-mile section of the main line —the main artery from Boston to Montreal—the damage to the Central Vermont lines, except on the Burlington branch, may be classed as minor. The line from Williston, Vt., to St. Johns, Que., 70 miles, was flooded at many places but is now in service. The branch lines from St. Albans, Vt., to Richford, and from Essex Junction, Vt., to Cambridge, are considerably damaged but restoration of the road sufficiently for the movement of trains will probably be completed by the time that this item reaches the reader. The line from Essex Junction to Burlington, eight miles, is, however, in serious condition, with two important steel bridges gone. The main line from White River Junction southward, was not very badly damaged and is now in service.

Canadian Pacific

The Canadian Pacific sustained serious damage from Richford, Vt., southward to Wells River, 95 miles. From Richford to Newport, 32 miles, the company expected to resume normal traffic on Wednesday of this week. The high water still impeded operations and the divers employed by the company had not been able to report positively as to the condition of some of the bridges. The tracks south of Newport will be blocked up in shape to be used by work trains by Monday next, November 21, after which it is hoped to work rapidly, and to have trains running by November 26.

St. Johnsbury & Lake Champlain

The St. Johnsbury & Lake Champlain, extending from St. Johnsbury, west and northwest, 96 miles, to Swanton, Vt., suffered serious damage at many places and the total loss is roughly estimated at $500,000.

A survey of the territory westward from St. Johnsbury shows several small washouts between that point and Greensboro, 28 miles; this part of the line was made passable by November 10. At Greensboro, a small bridge was lost and washed-out bridges or culverts made serious breaks at Hardwick, 35 miles and at Morrisville, 49 miles from St. Johnsbury. West of Cambridge Junc-

tion (64 miles from St. Johnsbury) there were numerous breaks but it was expected that trains could be run between Cambridge Junction and Swanton by Thursday of this week.

As we go to press, energetic work is going on at half a dozen places, a steam shovel having been borrowed from the Canadian National for use at Hyde Park and a pile driver for Wolcott. A pile driver was borrowed also from the Maine Central for repairing the break at Hardwick. Four work trains are busy; and by next Monday it is expected that the Canadian Pacific will repair its line from Canada southward through Newport, Vt., and then lend two steam shovels to the St. J. & L. C. Passengers and milk are now being moved between St. Johnsbury and East Hardwick, 31 miles.

To complete a track through from St. Johnsbury to Swanton will probably take nearly four weeks more.

Montpelier & Wells River

The Montpelier & Wells River was in the very center of the flooded region. Its main line extends from Montpelier eastward to Wells river, 38 miles, and the Barre branch has six miles of main track. Seven bridges were destroyed or made impassable. Between Montpelier and Barre four miles of track were completely destroyed as well as the yards at both Barre and Montpelier. The passenger and freight stations at Montpelier were flooded and badly damaged. The track has been restored for the use of work trains between Montpelier and Barre and trains are running on the main line from Montpelier as far as Marshfield, 15 miles. It is expected to have the line open throughout its length by Wednesday next.

Rutland

The main line of the Rutland from White Creek, N. Y., northward to Burlington, Vt., has probably been made passable, with one detour, before this paragraph reaches the reader. The crossing of the Winooski river, north of Burlington, where a long bridge was destroyed will probably be made passable by the completion of a trestle by November 20. The line from Rutland southeast to Bellows Falls, was expected to be made passable by today (November 19).

White River

The White River Railroad, 19 miles long, and doing all its business with two locomotives, extends westward from the Central Vermont at Bethel to Rochester, Vt. On this road, all of the bridges were damaged but none entirely destroyed. Three-fourths of the roadbed was made impassable, and present reports indicate that the line cannot be restored before next Spring.

Boston & Maine

On Wednesday of this week, the Boston & Maine had restored tracks so that trains were running through from Springfield, Mass., to Wells River, Vt., and from Boston to White River Junction, Vt.; and within 24 hours it was expected to complete the line from Boston to Wells River, Vt. This leaves work still to be completed on the Bethlehem branch; on the line from Whitefield, N. H., to Gorham and from Lisbon, N. H., to Wing Road.

There was major damage to bridges and track at more than 100 places on the Boston & Maine and the length of road affected was 880 miles. As before stated, the line between Boston and the Hudson river was made passable by November 11. This line was at once utilized for the enormous freight movement from the west to New England and no formal embargoes were placed; and in the 48 hours ending at midnight on November 13 (Sunday), 3,235 freight cars were moved east from the Hudson river gateways, in 56 trains.

At North Adams, Mass., 48 miles east of the Hudson river, the main line was additionally burdened by a considerable movement of freight from the Boston & Albany. Cars moved from that road to North Adams over the 20-mile single track North Adams branch. West of North Adams, on the B. & M., the heavy volume of freight had to be moved over a single track from Hoosick Junction to Petersburgh Junction, seven miles, while east of North Adams the augmented volume of traffic encountered, at the Hoosac Tunnel, five miles long, another obstacle, in the tunnel; for this distance of 5 miles every train had to be provided with an electric locomotive. The Boston & Albany's freight was moved over the main line to Greenfield, 36 miles, whence it was moved southward 36 miles farther, to Springfield. Over this last section of 36 miles, lighter locomotives had to be used and the trains had to be double-headed.

By Monday, November 21, the Boston & Maine expects to be moving trains over all of its important lines. The Boston milk traffic, an important element of the Boston & Maine's service, was restored almost to normal by November 11.

Boston & Albany

The three and one-half mile line of the Boston & Albany between Becket, Mass., and Middlefield, which was almost completely destroyed by a flood which, at its highest, measured a depth of 40 ft. or more, was sufficiently restored so that trains were run through on Tuesday morning, November 15, 11 days from the time the track was washed away. Two tracks were completed for a part of the way making single-track necessary on only 9,200 feet. The 268-mile detour via New York city to cover the obstructed line (from Albany to Springfield, 102 miles), was operated with great success. The Twentieth Century Limited, Boston to Chicago, arrived at destination only 3¼ hours late.

Delaware & Hudson

The Delaware & Hudson is now in operation throughout its lines except four miles at the terminus of the Rutland branch. The restoration of the road here will probably take 90 days. Passengers are carried to and from Rutland in buses, and for freight to and from Rutland, the track of an industrial road is utilized.

This road now runs four Montreal expresses, each way, each night; two of its own, one which normally goes over the Rutland, and the Montreal-Washington express. The latter runs over the Delaware & Hudson from Rouse's Point, N. Y., southward to Troy; thence over the New York Central to Mott Haven (New York City) thence over the New Haven to New Rochelle, N. Y., where it reaches its normal route, over the Hell Gate bridge.

Canadian National

The damage to the line of the Canadian National leading to Portland, Me., was repaired sufficiently by Monday, the 14th, so that passenger and freight service between Montreal and Boston was established via Portland, and the company announced that these services would be maintained as regularly as is usually done over the direct line via White River Junction, which is still blockaded.

THE CHICAGO GREAT WESTERN recorded in the month of October a new high average movement of 50.2 miles per freight car per day. This is the best record ever made by any railroad in the northwest region.

Brookhart's Government Ownership Plan*

By John J. Cornwell
General Counsel, Baltimore & Ohio

SENATOR BROOKHART, of Iowa, announces he is framing a bill for government ownership of the railroads. He will introduce and press it, claiming it will have the solid support of the Progressives, whoever that term embraces. He made two significant statements in connection with his proposed measure. One was that it would have powerful support from an unsuspected quarter, which, he said, would be a big surprise.

Perhaps he referred to the bondholders to whom he proposes to give tax-free government bonds in exchange for their railroad bonds. I should think that would make them happy were it not the senator indicates he will squeeze the value of the roads down to twelve or fifteen billion dollars. In that squeezing process he could hardly expect the stockholders to suffer all the punishment. When the bondholder learns just what the senator has in mind he would probably demur.

Of course, the senator is one of the group who believes the legislative branch of the government, state or national, is or ought to be supreme—all powerful—and that any legislation which can be log-rolled or traded through Congress or a state legislature or which passion, prejudice or a seeming emergency cause to be enacted, must not and should not be questioned. He forgets or would ignore the constitution and the courts. The fundamental doctrine that private property cannot be taken for public use without due compensation is overlooked. That would stand in the way of an arbitrary legislative valuation of railroad property and prevent semi-confiscation.

The other significant remark was that politicians cannot successfully run the railroads; that they must be operated by railroad men. His bill, therefore, will provide for the government's acquiring the properties and then leasing them to railroad companies for operation.

His theory, of course, is that if the government can take them on a very low basis, paying for them with 3 per cent or 3½ per cent bonds, they could be rented out to railroad companies for operation upon low rates as not so much money would be needed to pay interest on the bonds and there would be no stock upon which to pay dividends. That scheme may look good to some people, but I have already suggested that, in the last analysis, not Congress but the courts would determine the value of the properties were they taken under such a federal act. Unless our system of government were changed the owners of the properties would obtain what they could prove the properties were worth, and, under well established rules of law, it is conceivable that did such a seizure occur, the valuations found would be so large as to require higher rates than we have today.

Then, Senator Brookhart's plan not only would exchange tax-free government bonds for railroad securities, most of which are taxable by the states in some form or other, but with the government owning the roads the physical properties no longer would be taxable for state and local purposes. The railroads today pay approximately half a billion dollars annually in taxes, the very large part of which is state and local taxation. To wipe the railroads off the tax books of Iowa would throw upon Senator Brookhart's farmer constituents a large additional tax burden I suspect they call ill afford to assume. I wonder, therefore, if his plan, when understood, will arouse a very great outburst of enthusiasm in Iowa.

For the frankness of the senator in saying politicians cannot successfully run the roads, he is to be commended and congratulated. By that he says the government cannot run them for politicians run the government and if the government operated the roads it would be a case of their being run by the politicians. The senator is on safe ground when he made that statement, for his case was proven but recently. Few people today will controvert his statement on that point.

However, when one admits that as a fact, the ground upon which former advocates of government ownership stood has been taken away. Prior to the great war those people assured us the government could operate the roads more cheaply and more efficiently than private corporations. Apparently Senator Brookhart has batted that out of the field, if the war period did not do so entirely, and we need no longer concern ourselves with it.

* From an address before the Traffic Club of Philadelphia on November 14, 1927.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended November 5, amounted to 1,038,852 cars, a decrease of 73,000 cars as compared with the preceding week. As compared with the corresponding week of last year there was a reduction of 92,980 cars and as compared with 1925 a decrease of 23,794 cars. All classes of commodities showed a drop as compared with the corresponding figures for 1926 except merchandise, which showed a gain of 1,768 cars. Coal loading was 61,078 cars less than that for last year, and ore loading showed reduction of 14,322 cars. All districts also showed reductions, but the Southern and Southwestern showed increases as compared with 1925. The summary by the Car Service Division of the American Railway Association follows:

Revenue Freight Car Loading

Week Ended Saturday, November 5, 1927

Districts	1927	1926	1925
Eastern	228,325	250,979	239,541
Allegheny	202,444	230,995	207,544
Pocahontas	52,283	60,800	57,660
Southern	156,867	164,480	152,850
Northwestern	148,815	162,216	156,520
Central Western	163,069	172,728	167,830
Southwestern	87,049	89,634	80,701
Total Western Dists.	398,933	424,578	405,051
Total all Roads	1,038,852	1,131,832	1,062,646
Commodities:			
Grain and grain products	48,068	48,549	46,363
Live stock	35,080	37,074	38,104
Coal	166,329	227,407	189,365
Coke	8,813	12,927	16,020
Forest products	66,107	69,557	64,984
Ore	34,036	48,358	42,312
Mdse. L.C.L.	270,253	268,485	267,783
Miscellaneous	410,166	419,475	397,715
November 5	1,038,852	1,131,832	1,062,646
October 29	1,112,621	1,208,878	1,091,154
October 22	1,128,486	1,200,941	1,120,677
October 15	1,119,872	1,202,780	1,106,009
October 8	1,100,552	1,174,928	1,106,036
Cumulative total, 45 weeks	45,498,277	46,243,548	44,492,749

Car Loading in Canada

Revenue car loadings at stations in Canada for the week ended November 5 totalled 85,387 cars, a decrease from the previous week of 5,298 cars and an increase over last year of 1,590 cars.

Commodities	Total for Canada			Cumulative totals to date	
	Nov. 5, 1927	Oct. 29, 1927	Nov. 6, 1926	1927	1926
Grain and grain products	25,972	27,025	23,972	385,181	392,708
Live stock	3,448	3,588	3,281	99,979	97,032
Coal	8,547	8,902	9,161	304,624	262,308
Coke	412	571	501	15,588	16,392
Lumber	3,286	3,944	3,597	167,002	161,579
Pulpwood	1,034	1,477	1,184	131,644	115,319
Pulp and paper	2,279	2,216	2,316	97,196	104,691
Other forest products	2,938	2,961	3,123	134,011	136,343
Ore	2,049	1,997	2,236	75,012	78,046
Merchandise, L. C. L.	18,161	18,488	18,176	760,357	724,429
Miscellaneous	17,261	19,516	16,250	667,047	636,243
Total cars loaded	85,387	90,685	83,797	2,837,641	2,725,090
Total cars received from connections	36,071	38,464	37,820	1,660,824	1,648,906

New Accounting Plan Presented

National Industrial Traffic League sponsor of proposed cost accounting scheme submitted at I. C. C. hearings

DISCUSSION of proposals to revise the Interstate Commerce Commission's rules for railway accounting which have been under consideration for four or five years, entered a new phase during the past week as the result of the submission to the commission of a functional or cost accounting plan. The author of the plan is J. W. Roberts, president of Roberts-Pettijohn-Wood Corporation, Chicago, and his proposals are sponsored by the National Industrial Traffic League and the National Council of Traveling Salesmen's Associations.

The occasion of the presentation of the plan was the hearing now going on before Commissioner Joseph B. Eastman, relative to the commission's order of November 2, 1926, requiring depreciation accounting on fixed railway property, Docket No. 15,100, and setting up rules for depreciation accounting for telephone companies, Docket 14,700, in connection with which matters the commission is also considering the revision of the accounting classifications, Ex parte 91. The commission has taken up the three matters jointly because of their inter-relationships.

The hearings began on Wednesday, November 9. The first witness was Mr. Roberts who used the first three days of the hearings for the presentation of his so-called "alternative plan" for depreciation accounting and his similarly designated "alternative plan" for the revision of the carriers' accounting rules. The only interruption was devoted to a brief presentation by F. A. Barnes, assistant director of the I. C. C. Bureau of Accounts, of the bureau's latest revision of the accounting rules, which was published last April by the Railway Accounting Officers Association in that organization's Bulletin No. 113. Recess was taken from Friday to the Wednesday of the present week when the Southern Pacific and the Presidents' Conference Committee on Federal Valuation, with the assistance of a number of engineers and accounting officers, commenced the presentation of the carriers' views on the depreciation order. They will be followed by representatives of the telephone companies, the state commissions and others.

Mr. Roberts' Plan

Mr. Roberts, in presenting his plan, read from a prepared statement of such size as to include 79 single-spaced typewritten pages dealing with depreciation and 48 dealing with his classification, in addition to which he submitted a voluminous set of exhibits. He discussed depreciation first and the preliminary part of his material on that subject was abstracted in last week's *Railway Age*, page 943. As his testimony proceeded, he made clear that his proposals looked to the provision of what he designated as "service cost accounts." He stated more specifically that "The present scheme of railway accounting is reminiscent of the infancy of the industry" and in another place added, "Railway accounts must do something more than classify revenues and expenses by main departments providing the accounting procedure is to made a tool with which to accomplish those things which the law required and which the welfare of the country and of the carriers demands."

His plan, he said, was designed specifically to serve the following purposes:

First: To state the periodic financial status.

Second: To classify expenditures and receipts according to their character, insofar as that is compatible with classification according to their productive purpose.

Third: To classify expenditures and receipts according to their productive purpose, the quality of congruity being a determinative consideration in the classifications referred to in this and the preceding item.

Fourth: To protect the invested capital by disclosure of accounting facts which relate to its exhaustion and subsequent restoration, and by making proper distinctions between expense and capital charges.

Fifth: To promote efficiency and economy in operation and maintenance by disclosing performance costs which are inclusive of all elements of attached expense, which will permit of true comparisons of the cost of unit operations.

Sixth: To differentiate between public service, the cost thereof and the compensations received therefor, and private enterprise, its costs, and compensations.

Seventh: To properly respect as accountable entities, and record all transactions which affect those obligations to the general public referred to heretofore as the seventh requirement of a modern railway accounting system.

Mr. Roberts' so-called alternative plan has the following arrangement of general accounts in the operating expense classifications:

NAME AND ORDER OF ARRANGEMENT

Alternative Plan	Present Plan
I Maintenance of way and structures—Rail Line	I Maintenance of way and structures
II Maintenance of equipment—Rail Line	II Maintenance of equipment
III Conducting transportation—Rail Line	III Transportation—Rail Line
IV Traffic—Rail Line	IV Transportation—Water Line
V Transportation for company service—Credit RL	V Miscellaneous operations
VI Incidental operations — Rail Line	VI Traffic
VII Water line operations	VII General expenses
VIII Motor line operations	VIII Transportation for investment —Credit
IX General overhead expenses	

The primary accounts in Mr. Roberts' plan generally parallel the pattern of the present classification but there is a marked difference in that the Roberts classification has greater refinement and a large number of so-called sub-primary accounts. Thus, the 1914 classification at present in effect contains 197 primary accounts. The Bureau of Accounts' latest draft of the classification has reduced this number, principally by consolidation of the depreciation accounts, to only 123. Mr. Roberts' plan for the classification of operating expenses has 292 primary accounts but inclusive of the sub-primary and clearing accounts the total number of accounts becomes 1,098. One important phase is a proposal to recognize three sub-divisions, designated respectively "Line haul," "Stations" and "Train-terminal." Similarly, the maintenance accounts are divided into seven sub-primary accounts, as follows:

(a) Service value consumed
(b) Ordinary repairs
(c) Taxes and rentals
(d) Restorative repairs
(e) Service value restored—credit
(f) Casualty expense
(g) Retirement expense

The plan embodies elaborate arrangements for assignments to the individual service accounts or allocations on the basis of floor space occupied, gross ton-miles, cars dispatched, etc., as the case may be. The services selected for costing purposes are nine in number and are as follows:

1. Freight-*train*
2. Suburban
3. Coach
4. Sleeping-parlor car
5. Dining-buffet car
6. Baggage
7. Mail, passenger-train
8. Express, passenger-train
9. Milk, passenger-train

Mr. Roberts further outlined his purpose by saying, "We aver that railroad cost accounting is not imprac-

ticable. It is merely difficult. Costs are always difficult to find. . . ."

"Unless initial distributions have costs in mind, all subsequent efforts to develop cost is already foreclosed and must be futile.

"For these reasons a change in present practice is desirable. We think operations and functions should be costed currently, because of the economical possibilities involved, but we do not feel qualified to assert that service costs should be extended and completed monthly. We do advocate, however, the extension and completion of service costs, and that they be reported to regulatory agencies periodically for record purposes, so as to be accessible to the public, and moreover, so that cost explorations on behalf of any particular service may be confined within the limits of the expenses currently charged against that service concurrent with its performance. In other words, special studies post mortem should be confined strictly to compilations of already ascertained and recorded unit- and functional-costs. Special studies should never make redistributions and reapportionments, which are nothing less than a re-writing of the accounts. If such restrictions are imposed, some measure of protection is afforded to rate-payer interests. They are desirable because at present rate-payers are without effective means of protecting themselves."

It was in the earlier part of his testimony which related to depreciation, that Mr. Roberts developed his idea embodied in the establishment of seven sub-primary maintenance accounts. In these basic differences are pointed out as among the factors of "Service value consumed"; "Ordinary repairs"; "Restorative repairs"; "Service value restored—credit"; "Casualty expense" and "Retirement expense." This part of his testimony was abstracted in last week's issue of the *Railway Age*. Mr. Roberts summarized the relationships in a table, which is given herewith.

An abstract of Mr. Roberts' analysis of depreciation accounting and of his alternative plan for that purpose follows:

The plan of procedure which the groups here appearing would have adopted in inaugurating the practice of accounting for service capacity of exhaustible property rests upon the following premise:

1. The *substance to be accounted for* is the capacity to serve an intended purpose which property possesses when it is new.

2. *Depreciation* is the exhaustion of this substance which is the net result of causes, such as lapse of time, and wear and tear of use, which are incessantly operating to exhaust it, and ordinary repairs, which operate to retard exhaustion.

3. *Other causes*, not incessantly operating, which affect the substance to be accounted for, negatively or positively, as the case may be, such as casualties, inadequacy, obsolescence and restorative repairs, shall be accounted for in the measure of their actual effect, as and when their effects occur, and pursuant to methods later discussed.

4. *Expense of depreciation* is that proportion of the investment cost of the property in question which is consumed when the capacity to serve the intended purpose is wholly exhausted as the result of "depreciation."

5. *Natural service capacity* is that capacity to serve an intended purpose which exhaustible property possesses when it is new. (a) With respect to property which is not susceptible to ordinary repairs, natural service capacity is a determinate quantity, and will be referred to as "Basic Service Capacity." (b) With respect to property which is susceptible to ordinary repairs, natural service capacity is not a determinate quantity, because the restorative effect of individual instances or ordinary repairs cannot be measured. However, the general effect of ordinary repairs, which comply with established standards of routine maintenance, can be considered in conjunction with, although not separately from, the natural service capacity of repairable property, and the combined result is a determinate quantity which will also be referred to as "Basic Service Capacity."

6. *Basic service capacity*, in the case of non-repairable property, is natural service capacity. In the case of repairable property, it is natural service capacity plus the restorative effects of ordinary repairs made in the course of routine maintenance. Basic Service Capacity is the nearest possible approach to the substance to be accounted for as per item 1, and is acceptable for accounting purposes, but it must be fractionized to accommodate accounting processes.

7. *Natural service life* is a pseudonym for Basic Service Capacity which is used to facilitate fractionizing to a unit basis the accountable quantity of Basic Service Capacity. Natural Service Life is the period of time intervening between the date property is placed in use to serve an intended purpose, and the date when it is expected that its retirement from such use will be necessitated by depreciation resulting from causes which are presently operating, to-wit: Lapse of time, and wear and tear of use, which are exhausting, and ordinary repairs, which retard exhaustion.

8. *Units of natural service life* are the respective years, or months, as may be appropriate, which comprise the term of natural service life.
NOTE: Natural Service Life shall be expressed in the accounts at service value, calculated on a unit basis.

9. *Service value* (the accountable value of natural service life) is the original investment cost (estimated if not known) of the item of property, after deducting therefrom the cost value of salvage and the estimated cost of recovering salvage.

10. *The straight-line method* of determining the expense of depreciation is employed.

11. *The unit basis of accounting* is employed, with such adaptations of the "grouping" idea as may be legitimately used for the sake of convenience and simplicity.

12. *The accounting procedure covered by the plan* is not confined to the single function of accounting for depreciation and the expense thereof, but extends to and comprehends all transactions affecting natural service life and service value of existent property.

Classes Subject to Depreciation Accounting

Account 1—*Engineering* which relates solely to the enterprise as a whale and is a part of the general corporate expense, pursuant to the theory that the railroads must be maintained in perpetuity, is undepreciable. Engineering services rendered in the establishment of depreciable property such as buildings, bridges, tracks, etc., are inherently a part of the cost of such projects and are depreciable.

Sundry Accounts: Reasons given in commission's report at pages 365-6 for exempting accounts—

Account 2—Land for transportation purposes.
" 38—Roadway small tools.
" 39—Assessments for public improvements.
" 40—Revenues and expenses during construction.
" 43—Other expenditures—Road.

and the clearing accounts—

Account 41—Cost of road purchased.
" 42—Reconstruction of road purchased, and
" 47—Unapplied construction materials and supplies

are sufficient to exclude them also under the alternative plan.

Account 3—*Grading:* The alternative plan comprehends such items of depreciable property as grillage, riprap, wing dams, retaining walls, and other protections of the right-of-way. It excludes investment in cuts and fills from depreciation accounting in recognition of the contention that such property appreciates with time and use.

Account 12—*Track Laying and Surfacing*: The investment should be divided and assigned to the service

Analytical Chart of Causes Affecting Natural Service Capacity

Cause	When operative	Effect on natural service capacity	Manifestation of cognizable effect	Most accurate available measure of loss or gain	Basis on which loss or gain should be accounted for - by	Era of accountability based on retirement	Logical ultimate effect on operating expenses	Status of loss or gain as it should be when accounted for
Lapse of time	Presently	Exhaustive	Gradual	Estimate	Accrual	Priority	Debit	Actual
Superannuation	Presently	Exhaustive	Gradual	Estimate	Accrual	Priority	Debit	Actual
Wear and tear	In futurity	Exhaustive	Sudden	Actual	Amortization	Posteriority	Debit	Actual
Inadequacy	In futurity	Exhaustive	Sudden	Actual	Amortization	Posteriority	Debit	Actual
Obsolescence	In futurity	Exhaustive	Sudden	Actual	Concurrent absorption (1)	Concurrent	Debit	Actual
Casualties	Presently	Restorative	Gradual	Actual	Concurrent absorption	Concurrent	Debit	Actual
Ordinary repairs	In futurity	Restorative	Sudden	Actual	Concurrent absorption	Posteriority	Credit	Actual
General repairs								

(1) Permissive amortization in extraordinary cases.

value of the depreciable record units of ties, rails, other track material, and ballast, and depreciated along with such materials.

Account 76—Interest During Construction: To the extent that interest during construction has been assigned, or can be assigned, to units of depreciable property, it should be included in the service value and depreciated.

Accounts 71 to 75, and 77—General Expenditures: The investment carried in these accounts relates to the founding of the enterprise, and it seems a reasonable assumption that as long as the enterprise endures there has been no accountable efflux of this investment.

Under the alternative plan the physical property is first to be inventoried and scheduled. The schedules should be set up by valuation sections, or subdivisions thereof. The property inventories having been set up, the investment accounts should then be analyzed. Investment in intangible and non-physical property should be set aside and ignored for the purposes at hand, and the investment in physical properties should be determined with such refinement as is possible. Then so much of that portion of investment in physical property as may be, should be assigned to items on the inventory, individually or collectively, as may be necessary. Thereafter the residue of the investment in physical property should be assigned to the inventoried items which could not be costed, either by estimating the original costs of such items as of the date they were installed, and balancing the total of such estimates to the residue aforesaid, or estimating on a uniform basis the cost of reproducing each of the uncosted items, and ratably distributing the unassigned residue of the investment in physical property on the basis of such estimates. The amount of recorded investment having been thus assigned, the inventoried items of depreciable property should be listed on Depreciable Property Schedules for accounting purposes, and the items of non-depreciable property and the investment assigned thereto should be ignored. The general account Investment in Road and Equipment should be left as it is. The next step is to deduct the cost value of salvage less the estimated expense of recovering the salvage, and the result is service value, which represents the aggregate expense of depreciation.

The Depreciation Rate

Under the alternative plan it is not required that an annual rate of depreciation be found, because the amount of the monthly charge for depreciation on each record unit of property is found by dividing the number of months comprised in natural service life into the amount of service value. The monthly charge is entered in a column of the depreciable property record opposite the date of expiration. The monthly charge remains the same during the entire useful life of the property, unless experience shall have disclosed an error in the initial estimate of natural service life. In the event no changes have occurred during an accounting period, the aggregated totals of the columns give the monthly charge for depreciation by accounts. If changes have occurred during the period, the column must be refooted to a new total.

In the face of positive knowledge of constituent materials and structural design, and of climatic, service usage, and routine maintenance conditions, the natural service life expectancy of identical property is to be developed from experience of the past, and the ascertained results of that experience is to be adapted and adjusted to fit the individual case, ignoring the possible effects of casualties, obsolescence, inadequacy, and restorative repairs, and considering only the effects of lapse of time, wear and tear of usage, and the presently obtaining standard of routine maintenance, as compared with the conditions obtaining during the time when experience was gained.

The alternative plan would make the depreciation reserve account precisely what its name implies. Gross credits thereto will represent, consumption of service value, or service capacity exhausted, that is, impairment of invested capital, while gross debits thereto will signify retirements, as well as service value restored through the restoration of service capacity, that is, repairment of invested capital. The balance in the account will always represent the net loss of service value which has not been restored, which is significant of exhausted service capacity which in turn is depreciation.

Accounting for the Ebb and Flow of Service Capacity

Accrued Loss: The net effect of superannuation and routine maintenance through ordinary repairs shall be accrued. The natural service life of respective units of depreciable property having been determined by inspection and the exercise of judgment by those capable of perceiving the facts, and the service values having been ascertained, the service value shall be charged off to operating expenses ratably during the term of natural service life, and concurrently credited to a balance sheet account, which we shall call the Depreciation Reserve account. The monetary loss so accrued we shall call the expense of accrued depreciation.

Restorative Repairs: All repair and renewal work which is outside the category of ordinary repairs on which the recognized standard of routine maintenance is based shall be covered by memorandum AFEs and completion reports, a copy of which shall be supplied to the accounting department. They shall reflect the estimated number of units of natural service life existent at the time the contemplated work will be undertaken, the number of such units resultant after the work shall have been completed, and the net gain as the result of the work, together with its cost. The cost of such work shall be charged to operating expenses, but concurrently operating expenses shall be credited with the aggregate service value of the units of natural service life restored by the work, and the debit applied to the depreciation reserve account.

Casualties: Service value destroyed as a result of casualties shall be charged directly to operating expenses, and the proceeds of insurance shall be credited thereto. When casualty damage is repaired, the expense shall be charged to operating expenses, and the service value restored by the repairs shall be concurrently credited thereto. If the resultant effect is seriously to distort the operating showing and cause embarrassment which would be avoided by spreading the extraordinary expense over a subsequent period of reasonable length, the excess charge should be spread only with the permission of the commission.

Obsolescence and inadequacy: Losses of service value due to obsolescence and inadequacy are not accruable. They should be accounted for as and when they occur. . . . Matured losses of this character may be charged to operating expenses of the period in which they occur, or they may be suspended or amortized over the term representing the useful life of the property on account of which they were incurred.

The difference between the amount of usefulness taken out of property and that concurrently put back into it measures the degree of adequacy of current maintenance. The object of maintenance being to preserve property as nearly as possible in its original condition, and if at the end of any period the effect of maintenance has been to create as many units of natural service life

as were exhausted during that period, the current maintenance was 100 per cent effective, and there was no impairment of invested capital, and no liability created respecting service capacity consumed and not restored. If the current restoration was in deficit, however, the deficit representing what is commonly termed deferred maintenance, the capital was correspondingly impaired, and an obligation was created. On the other hand, if restoration exceeds the consumption, *overmaintenance* is the result, a corresponding capital impairment *previously incurred* is made good, and an equivalent liability *previously established* is wiped out. If the units of natural service life were correctly fixed and accurately accounted for, the *incurrence of a deficit* would necessarily have *preceded* the appearance of a surplus for a local period. In the absence of a prior deficit, the appearance of a surplus would point conclusively to an error in the basis of accounting, or to enlargement of the original capacity of the property, which is a betterment.

In order to avoid distortions which we seek to prevent, it is manifestly necessary when crediting operations for natural service life units restored, that the accounting employ the same unit values (which is to say "service values") which were used when operations were charged with equivalent units consumed. If that is done, the dollars contained in an account "Service value consumed" will represent the same substance, varying only in degree, as dollars contained in an opposing account—"Service value restored." Comparison of one account with the other will disclose the degree of adequacy of current maintenance. When the contra debits and credits are carried to the Depreciation Reserve account the credit balance standing in the reserve will correctly indicate the extent to which investment has been impaired and the amount of restoration due.

Past Depreciation Not Accounted For

If past accrued depreciation exists which has not been provided for, it is a loss, and as a loss it is not present expense, therefore it should not be charged to operating expenses in any form. It should be accounted for as a loss, according to accounting principles. In so disposing of it, the ratepayers will not be divested of responsibility. The carriers are such an important part of our national equipment that their necessities must be met. The plainer their necessities are made apparent, therefore, the better it is for the carriers and the public alike. If the loss in question weakens them to the extent that succor is necessary or desirable, the means are at hand to provide it in an orderly manner and as prescribed by law. The real danger, it seems to us, lies in camouflaging the true condition—not in exposing it in order to meet it.

The alternative plan contemplates that past accrued depreciation determined by inspection and examination of the property, shall be credited to the depreciation reserve and charged, either to profit and loss, or to a suspense account, as the commission may decide.

It is respectfully suggested that the form of the record is worthy of the commission's specific consideration.

The alternative plan contemplates that a record shall be kept which will contain the history of all depreciation accounting transactions, which, once established, shall have a long period of usefulness without being rewritten. Under that plan the detailed analysis of the property inventory (which is required in the case of either plan) is to be preserved on a special form of schedule which combines a record of the property and of the depreciation transactions which relate to it. These schedules would be set up according to Federal Valuation sections, or sub-sections, and would complement and work in conjunction with records required to be kept by Valuation Order No. 3. It would be kept up to date by currently posting all transactions affecting the character of depreciable property, the ebb and flow of its service value, additions and betterments, and retirements thereof.

The record forms referred to were offered as exhibits.

Decision in Firemen's Wage Case Due Before December 20

ORAL argument before an arbitration board at Chicago for and against a $1 per day increase in the wages of western firemen was concluded on November 11, completing the hearing of testimony which began on September 30. Before the board recessed Judge Haslett P. Burke, chairman, announced that it will reconvene at Denver, Colo., on November 28 to reach a decision in the case. The 60-day time limit, within which a final decision was to be reached, expires on November 28 and has been extended to December 20.

In his oral argument, on November 10, Donald R. Richberg, attorney for the Brotherhood of Locomotive Firemen and Enginemen, devoted his attention to the 10 major propositions advanced by the employees as reasons for an increase in compensation, summing up the testimony presented by each witness and revlewing the salient facts in the labor exhibits. The propositions to which he addressed himself were as follows:

(1) The locomotive fireman has always been the hardest worked man in train service. (2) Twenty or 30 years ago the average fireman could expect promotion to the position of engineer after a few years of work; this is no longer the case. (3) The average fireman is no longer an apprentice engineer, he is commonly a qualified engineman who is required to continue work as a fireman for from 10 to 20 years. Prior to 1900 the fireman's term of service led with certainty and promptness to promotion. (4) In the last 20 years the work of a fireman has become harder, more difficult and more exacting through the increasing size of locomotives. A higher degree of technical skill is now required and more responsibility has been imposed upon the fireman. (5) The value of the fireman's service to his employer and to the community has practically doubled in the last 20 years, as measured by the productivity of his day's labor and the actual amount of service performed. (6) Today the firing service neccessary to haul twice the tonnage over more miles of track in less time is performed by the same one fireman who produced less than half this service 20 years ago. The average revenue tons per train in the United States in 1903 were 310.54 and in 1925, 662.53, an increase of 113 per cent.

(7) Today the daily wage of the fireman in the western district has less actual purchasing power than the wage rate of 20 years ago. If, as suggested by counsel for the carriers, the 1907 basic wage rate of $2.68 with a purchasing power of $3.27 had been used in computations the 1926 basic wage of $5.55 still has only a purchasing power of $3.16. (8) During the past 20 years there has been an increase of over 30 per cent in the purchasing power of the average wage rate of nearly a million skilled workers whose services have a value comparable with those of the firemen. (9) During the past 20 years it can be reasonably estimated that the scale of living in America has undergone an increase of 50 per cent and the firemen is entitled to receive a substantial increase in the purchasing power of his wage as a part of the program necessary to maintain the general prosperity. (10) The fireman must be ranked with the

most highly trained, hard working and essential workers and the same time he is engaged in one of the most hazardous and nerve wearing occupations.

In concluding his argument Mr. Richberg referred to evidence presented by the railroads concerning their financial conditions and the method employed in computing the average annual earnings of the firemen. He dismissed the latter with the statement that "it would be a waste of time" to review the methods used.

The reply argument on behalf of the railroads was begun by H. A. Scandrett, vice-president of the Union Pacific. In introducing his argument he observed that an increase of $4,548,669 in the 1926 payroll would result from a decision granting increases similar to those given in the East and the Southeast. He characterized this wage demand as an attempt to start a new cycle of wages at a time when the cycle inaugurated three years ago is still in the process of working itself through the other classes of railroad employees.

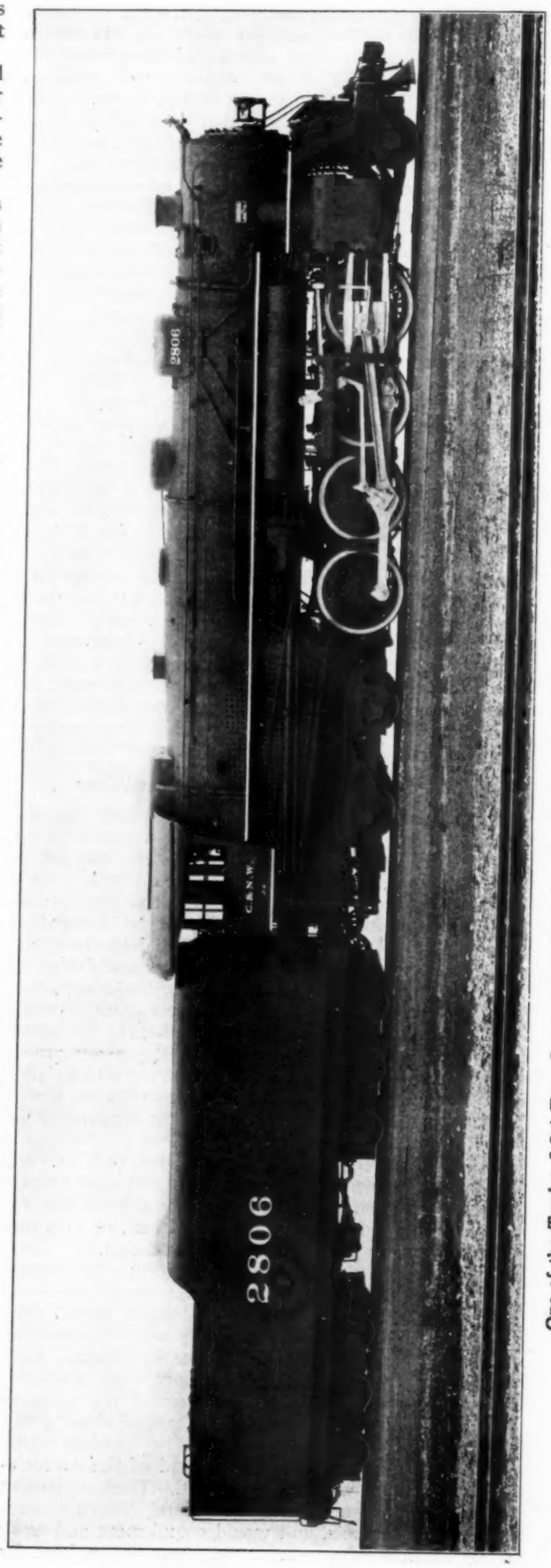
Mr. Scandrett devoted his remarks to a final refutation of the arguments advanced by Mr. Richberg, showing that the firemen's work cannot be regarded as a life work in that the average time from date he enters service to his promotion to engineman is eight years, and that 63 per cent of the total gross ton-miles in the western district in 1926 were handled by stoker-fired and oil-burning locomotives. In considering the argument by the Brotherhood that the "productivity of the fireman has doubled within 20 years," he pointed out that the increased car load has been made possible through purchase of larger cars and heavier train loads have come about through the purchase of heavier locomotives. Expenditures for improved track and roadway and terminal facilities have come along with heavier locomotives, he declared.

Mr. Scandrett observed that he had developed in cross examination of D. B. Robertson, president of the Brotherhood, that on an hourly basis the $3.39 wage rate of 1915, if reduced to 33.9 cents per hour, would be overshadowed by the $5.55 wage rate of 1926, or 69.4 cents per hour, by 104 per cent as compared with an increase in the cost of living of 67 per cent.

Mr. Scandrett also referred to the controversy, which continued throughout the hearing over the method of computing average earnings. He quoted a letter from M. O. Lorenz, director of the Bureau of Statistics of the Interstate Commerce Commission, to show that it is the opinion of that body that to divide the total compensation by the number of the names on the payroll rather than the number obtained on the middle of the month count is misleading in its results. The weighted average annual wage reported by the I. C. C. for all classes of firemen in 1926 was $2,227, he said. Mr. Scandrett also referred briefly to the limitations imposed on earnings during times of peak business by the Chicago joint working agreement.

K. F. Burgess, general attorney of the Chicago, Burlington & Quincy, concluded the carriers' reply argument, referring further to the difference of opinion on the figures of average annual earnings. The I. C. C. figures of earnings are prepared by the railroads under rules prescribed by that body, he said, and quoted the director of the Bureau of Statistics to the effect that such figures "are designed to show what a man working with ordinary regularity, but less than full time, could earn." He also called attention to an exhibit, in support of the contention that the earning power of industries in the West has been reduced, which showed that in 1925 there were 468 separate appearances in opposition to the proposed 5 per cent increase in freight rates.

Mr. Richberg devoted a short period on November 11 to the closing argument on behalf of the employees.



One of the Twelve 2-8-4 Type Locomotives Built for the Chicago & North Western by the American Locomotive Company

2-8-4 Type Locomotives for the Chicago & North Western

Twelve purchased for freight service—Develop maximum tractive force of 79,500 lb. with booster

THE Chicago & North Western recently received 12 freight locomotives of the 2-8-4 type from the American Locomotive Company. These locomotives develop a tractive force of 67,200 lb. at 60 per cent cut-off. The rear pair of trailing truck wheels is equipped with a Franklin booster which furnishes an additional 12,300 lb. tractive force, working at 50 per cent cut-off. This gives a total starting tractive force of 79,500 lb. for the locomotive. The boilers carry a pressure of 240 lb. and the cylinders are 28 in. in diameter by 30 in. stroke. The drivers are 63 in. in diameter. In working order these locomotives weigh 397,000 lb. of which 253,500 lb. is carried on the drivers, 39,000 lb. on the engine truck and 104,500 lb. on the trailing truck.

The railway company's standards were maintained throughout as far as possible in the design of these locomotives, the Commonwealth Delta, four-wheel trailing trucks being used in connection with a Commonwealth cradle as on the previous order for 2-8-4 type locomotives, built for the railroad by the American Locomotive Company. The new locomotives are designed to negotiate maximum grades of one per cent, the curves on which are not compensated.

Operating Conditions

The two new 2-8-4 type locomotives are assigned to service on the Southern Illinois division, a 192-mile single track line, the terminals of which are at Benld, Ill., South Pekin and Nelson; at the latter point it joins the Omaha line. The locomotives will be used to haul coal and time freight from the mines and the connecting lines to Peoria and from connecting railroads in that district to the main line junction at Nelson. This line, it is said, handles the heaviest tonnage of any single railroad in this country. The trains are operated on time schedules in one direction and run as extra trains in the other direction. The time-card trains operate in the direction of the heavy traffic and the schedules are so arranged that such additional sections of the schedule trains can be operated as traffic conditions may require.

The new locomotives will relieve a number of 2-8-2 type locomotives which have a tractive force of 60,100 lb. They will handle trains of 6,600 tons between Benld and South Pekin, the maximum grade on this line being approximately 0.7 per cent. The tonnage from South Pekin to Storage, Ill., is 5,000 tons, an additional 2-8-4 type locomotive being used between Limestone and Radnor, a distance of seven miles with a ruling grade of one per cent. From Radnor to Storage the ruling grade is .5 per cent, and from this point the locomotives will handle a train of 7,500 tons to Nelson.

The Boiler and Steam Control

The boiler is of the radial stay, extended wagon top type, 86 in. inside diameter at the front and 94 in. outside diameter at the throat. Although it is intended to operate at 240 lb. working pressure, the boiler is capable of carrying a pressure of 250 lb. per sq. in. The barrel contains 204 3½-in. flues and 71 2-in. tubes, 20 ft. long. A Type E superheater having 102 units is used. The firebox is 150⅛ in. long and 96¼ in. wide inside the sheets, which gives a grate area of 100.3 sq. ft. It is fitted with two Nicholson thermic syphons and a brick arch, which is carried on two arch tubes and the syphons. Alco flexible staybolts are used in the throat, sides and back head.

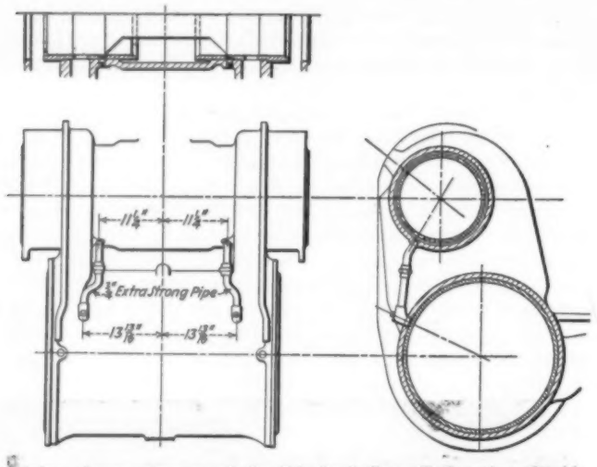
Six of these locomotives are equipped with Duplex D-1 stokers while the remaining six are equipped with the Dupont Simplex type-B stoker. The engine for the Dupont stokers is located on the tender and the exhaust is piped into the tank. The exhaust from the Duplex stoker is carried into the cylinder saddles. Commonwealth cast steel ashpans of maximum capacity are used and are designed to provide an air opening equal to 180 per cent of the total tube area. The total evaporating surface of 4,872 sq. ft. is made up of 740 sq. ft. in the tubes, 3,721 sq. ft. in the flues, 288 sq. ft. in the firebox,

Interior View of the Cab

20 sq. ft. in the arch tubes and 103 sq. ft. in the syphons. The total superheating surface is 2,243 sq. ft., which gives a combined evaporative and superheating surface of 7,115 sq. ft.

An interior dry pipe conveys the steam from a shut-off valve in the dome to the superheater header, which contains a built-in American multiple type throttle. The steam distribution is controlled by a Walschaert valve

gear arranged for 60 per cent maximum cut-off and is operated by means of a Barco reverse gear. A starting port arrangement is included in the limited cut-off feature, which is designed to eliminate excessive pre-admission. The piping arrangement to the starting ports, on which a patent has been applied for, is shown in the drawing. An auxiliary port, formed in each valve chamber bushing, leads to the cylinder barrel through a pipe, the pipe tap into the cylinder being so located as to be covered by the piston, when at or near the end of the stroke to prevent undesirable pre-admission of steam. The blower, stoker and headlight generator are operated



Piping Arrangement of the Limited Cut-off Starting Ports

by superheated steam but the air compressors are operated by saturated steam. All 12 of these locomotives are equipped with Worthington feedwater pumps.

The Running Gear

The engine truck is the Commonwealth outside bearing type equipped with 33-in. diameter rolled steel wheels with 6½-in. by 12-in. journals. The wheels are interchangeable with the front wheels of the trailing truck. Markel removable type hub liners are applied to the engine truck and the front and back trailing truck journal boxes. The main driving boxes are of the Grisco type, the remaining driving journals being fitted with the Murrin three-piece bearing driving box. Six of these locomotives are equipped with Economy grease cellars and six with Franklin cellars. The main crank pins are hollow-bored for grease lubrication. The main rods are of the tandem type, forked at the main pin and extended to the rear crank pin. The frames are of Hylastic steel and have wearing plates riveted to each pedestal leg in accordance with the railway company's practice for use in connection with shoes and wedges formed without side flanges.

The Tenders

The tenders have a capacity of 15,000 gal. of water and 20 tons of coal. They have Commonwealth underframes and are carried on Commonwealth six-wheel trucks provided with clasp brakes. The wheels are of cast steel, 33 in. in diameter and have 6-in. by 11-in. journals.

Table of Dimensions, Weights and Proportions of the Chicago & North Western 2-8-4 Type Locomotive

Railroad	Chicago & North Western
Builder	American Locomotive Company
Type of locomotive	2-8-4
Service	Freight
Cylinders, diameter and stroke	28 in. by 30 in.
Valve gear, type	Walschaert
Valves, piston type, size	14 in.
Maximum travel	8½ in.
Outside lap	2 7/8 in.
Exhaust clearance	1/8 in.
Lead in full gear	3/8 in.
Cut-off in full gear, per cent	60
Weights in working order:	
On drivers	253,500 lb.
On front truck	39,000 lb.
On trailing truck	104,500 lb.
Total engine	397,000 lb.
Tender	287,000 lb.
Total engine and tender	484,000 lb.
Wheel bases:	
Driving	16 ft. 9 in.
Total engine	39 ft. 8 in.
Total engine and tender	82 ft. 3 in.
Wheels, diameter outside tires:	
Driving	63 in.
Front truck	33 in.
Trailing truck, front	33 in.
Trailing truck, rear	44 in.
Journals, diameter and length:	
Driving, main	12 in. by 14 in.
Driving, others	11 in. by 13 in.
Front truck	6½ in. by 12 in.
Trailing truck, front	6½ in. by 12 in.
Trailing truck, rear	9 in. by 14 in.
Boiler:	
Type	Straight top
Steam pressure	240 lb.
Fuel, kind	Bituminous
Diameter, first ring, inside	86 in.
Firebox, length and width	150⅛ in. by 96¼ in.
Tubes, number and diameter	71—2 in.
Flues, number and diameter	204—3½ in.
Length over tube sheets	20 ft.
Grate area	100.3 sq. ft.
Heating surfaces:	
Firebox	288 sq. ft.
Arch tubes and syphons	123 sq. ft.
Tubes and flues	4,461 sq. ft.
Total evaporative	4,872 sq. ft.
Superheating	2,243 sq. ft.
Comb. evaporative and superheating	7,115 sq. ft.
Tender:	
Water capacity	15,000 gal.
Fuel capacity	20 tons
Wheels, diameter outside tires	33 in.
Journals, diameter and length	6 in. by 11 in.
General data, estimated:	
Rated tractive force	67,200 lb.
Booster tractive force, 50 per cent cut-off	12,300 lb.
Total tractive force, engine and booster	79,500 lb.
Weight proportions:	
Weight on drivers ÷ total engine, per cent	63.8
Weight on drivers ÷ tractive force	3.77
Total weight engine ÷ comb. heat. surface	81.4
Boiler proportions:	
Tractive force ÷ comb. heating surface	9.45
Tractive force × dia. of drivers ÷ comb. heating surface	595
Firebox heat. surface ÷ grate area	2.87
Firebox heat. surface, per cent of evap. heat. surface	5.92
Superheat. surface, per cent of evap. heat. surface	46.2

President Willard and Mrs. Nathan (Pageant Director) in Tower at Halethorpe from Which All Movements in B. & O. Pageant Were Controlled

Lumber Not in Stores Custody Results in Neglect and Bad Accounting

The Neglected Science of Railway Storekeeping

Reduced stocks and better accounting assured by new plan of handling roadway materials

By R. A. Weston
Certified Public Accountant, New Haven, Conn.*

Part III

IN recent years, the feeling has grown that the supply department should have charge of the materials and supplies for all departments and should establish general stores of all kinds. Opposition to this has developed on the part of the maintenance of way department, where various foremen are loth to relinquish control over the materials each have carried, but they have generally been overruled, with the result that the jurisdiction of the supply department is being extended over this class of material. In working out the details of how this jurisdiction and control should be exercised, however, many compromises have been made and the results have often proved far from satisfactory.

Three Methods Used

Three different general methods have been adopted. Under all of them, the individual foreman are usually permitted to keep a stock of material, subject to regulation and supervision of the storekeeper.

In one case the materials are charged by the supply department to the maintenance of way department (not operating expenses) when they are shipped from the general store. If the material is shipped direct from an outside supply house, the charge is made when the purchase invoice is taken into the account. The materials are then carried in what is called a division, or a line of road, stock account, handled by the maintenance of way office, where reports and distributions are made and forwarded through supply department channels, but the value of material on hand always remains in the general store's stock account.

Another method is to charge the materials directly to the operating expense accounts when they are shipped from the general store. The theory is that the maintenance department shall not carry any large stocks of material, but shall order just enough for current requirements, usually a 30-day period. Under this method the material disappears from the stock account of materials on hand when it is shipped and chaarged out, and is thus lost sight of in the records and in the accounts. This method is in quite wide use over a number of important systems, but it would appear to be contrary to the rules laid down by the Interstate Commerce Commission, to the effect that no material shall be charged out until actually put into use. Under this method it is often intended that a close watch shall be kept by the supply department, with the view to returning the material to stock, if it is not used within a reasonable period, and crediting the expense account that was charged when the material was shipped. Also at inventory time, the idea is to take such material back into stock, so that the value of all material on hand will not be understated on the annual balance sheet of the corporation.

Under a third method, the material, when shipped from stock, is transferred from a general storehouse account to a division storekeeper's line of road stock account until cleared by reports to him from the maintenance of way department that the material has actually been used, when it is then charged to operating expense accounts from the information contained on such reports. This method has the advantage of giving the supply

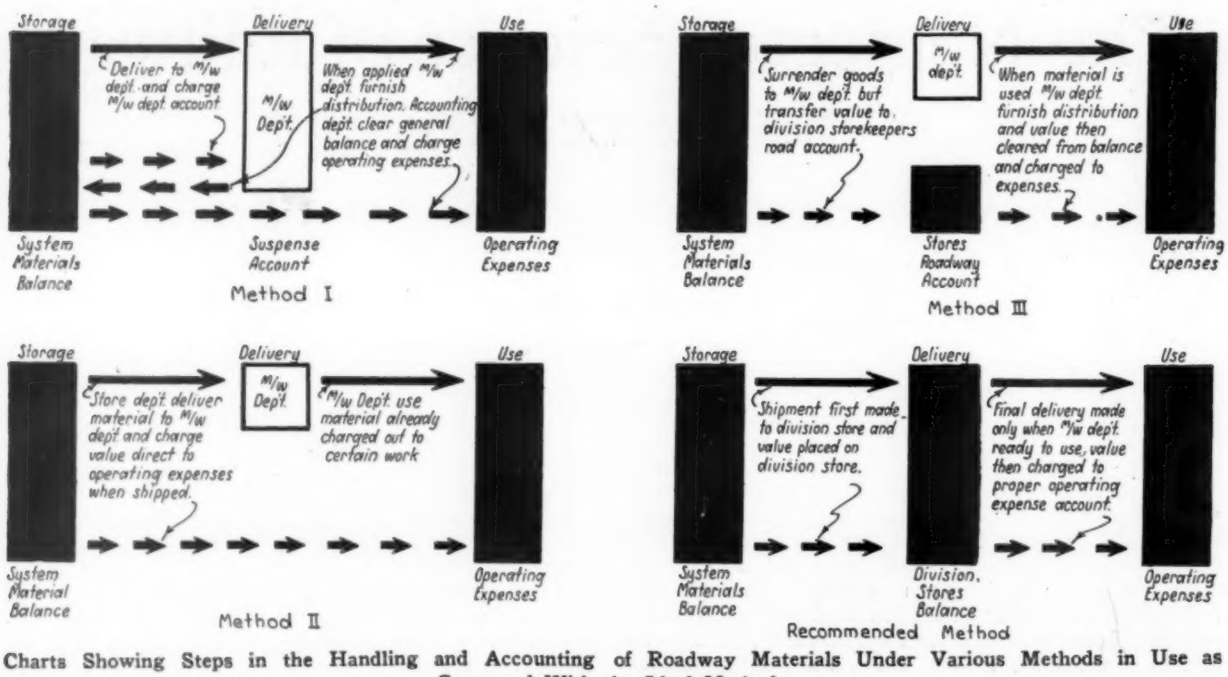
*Parts I and II of this series of articles by Mr. Weston, former general storekeeper of the New York, New Haven & Hartford, appeared in the *Railway Age* of September 24 and October 15.

department a nominal control of all material until used and avoids criticism for charging out material before it is used.

All of these methods, however, are open to the fundamental objection that the physical control over the material by the supply department has become practically lost when the material has been shipped from the supply depots, and with this physical control gone it is almost impossible to regulate the stock effectually. The storekeeper is dependent upon the records and reports kept in a separate department, and this work is of secondary importance to that department. No matter how good the rules and the intentions, the information is to a large extent delayed and undependable. The storekeeper has lost touch with a large value of materials in the aggregate which nevertheless is included in the materials and supplies account for the system and for the size of which the head of the department is held responsible by the management. Further, when the storekeeper finds a surplus and wishes to transfer it, he is dependent for the carrying out of the order upon men who are not on his payroll, who do not always agree that a surplus exists and are often loath to see the material shipped away.

Under the second method, the supply department is in a worse position, so far as control over the stock is concerned, because it has become lost from the record and eliminated from the stock balance and no reports of it are received. It may be said that under this method only small working stocks will be shipped, and that the materials will be put into use within the next 30 days, and also that it is in the interest of the maintenance departments to keep these shipments at a minimum, because the values are charged to their expense accounts when shipped, and if the requisitions are unduly large the charges will be heavy, thus causing criticism to fall upon that department. Nevertheless such stocks will grow beyond reasonable proportions, as the foremen who determine the quantities do not appreciate the effect in the accounts, and are chiefly interested in accumulating sufficient materials so that there will be little likelihood of shortage. Moreover, when such stocks do get too large, and they do, considerable work is involved in loading and shipping the materials to some other place. For this reason, considerable delay results in making the shipments, to say nothing of the unproductive labor and expense involved, in the several unnecessary handlings of the material and the transportation cost, especially when it consists of heavy track material.

In addition, there are objections from the accounting standpoint. Various difficulties arise when material is charged to operating expenses before it is used or applied. The material that is left over and gathered up from the work should be credited back to the account charged with it when the material was shipped. But to rely upon the men in the field for a correct report of the material left over is unsafe. Again, accounting clerks cannot be relied upon to make the proper reports for accounting purposes because it is frequently difficult to determine positively just what account was charged when the shipment was made. All of this tends to introduce accounting errors. In cases of emergency or where changes are made in plans, moreover, the materials are frequently used for quite different work than that shown upon the order for the material and to which the materials have been charged. Correct accounting in such cases calls for reports requesting a credit for the account originally charged and a charge for a different account. Generally such reports will not be made and the errors in the accounts will remain. There is a further objection to this method. There will always exist on the line of road a large amount of materials in the aggregate which have been charged out but not used, and therefore not shown among the assets on the company's books. The result is inflated operating expenses. Sometimes attempts are made to remedy this condition by taking the material into stock again at the time of taking the annual inventory and crediting the accounts that have been overcharged. But this causes confusion because almost immediately after the inventory has been taken and reported, these materials must be charged out again or the impossible condition will arise where some of the stock on the line of road is in the stock account, while that in current shipments is charged out, resulting in an



Charts Showing Steps in the Handling and Accounting of Roadway Materials Under Various Methods in Use as Compared With the Ideal Method

involved condition from which it is hard to become extricated. Therefore, it may be said that this method is so pernicious that it must be unqualifiedly condemned.

Complete Control Is the Solution

The solution of the troublesome question lies in the supply department exercising complete control over the material, from the time that it is shipped or taken from storage places until it is put into use. This applies both to the physical handling of the material and the accounting for it, the latter function, however, being under close supervision of the accounting department. Instead of material being shipped and consigned to foremen and others in the maintenance department the shipments should be made to storekeepers who would be responsible for its handling at destination.

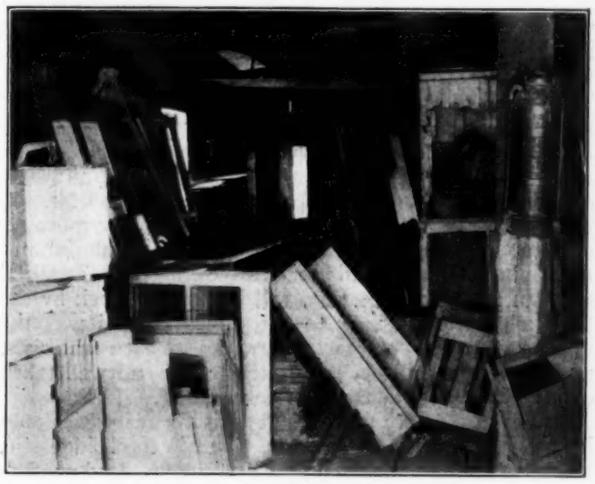
This plan can be carried out by establishing a division storehouse on each operating division at the point where the maintenance forces make their headquarters and from which their work train starts out each morning. If possible, this point should be where the division store is established to serve mechanical department needs. If this cannot be done, it means a division store to serve the maintenance forces as well as one to serve the needs of the men who repair the equipment. Next, provision should be made for a place for the various foremen doing the different classes of work, convenient to the store, where they can assemble and keep their working tools, preparatory to starting out and returning from work, and where odd jobs can be done indoors during bad weather. If practical, work train headquarters should be limited to one place on a division, but if not, then a smaller store and a storekeeper should be established at each worktrain headquarters. All other points would be eliminated and the headquarters of foremen moved to the places where the work train headquarters are established.

There will be a few points which cannot be so treated

Roadway Supplies Should Not Leave Storekeeper's Yard Until Ready to Use

He Can Handle Them Cheaper and the Accounting Will Follow the Material

and at which small working stocks of material must be provided for the workmen but these stocks should be in charge of storekeepers. At some such points where storekeepers are stationed for mechanical department needs, these storekeepers can act for both departments. In other cases, the storekeeper can act at two places, spending his mornings at one and his afternoons at the other, or it may be possible to assign a man from the division store to spend half of his time at the small point and the other half at the division store. The additions in the supply department which such a plan requires are not as great as may appear at first sight, and if foremen and workmen of other departments are relieved of the supply work they will have more time to give to the actual work of maintenance, thus offsetting some of the increase in supply department rolls. Furthermore, the reduction in the number of points on a division where workmen's headquarters exist, and to which working stocks must be shipped, reduces transportation, reduces cost of handling materials, reduces aggregate value of stock carried and gives more flexibility to the material in stock.



A Large Stock of Window Sash in a Carpenter Shop

Better Have Been Issued from the Stores Only as Needed. Thereby Avoiding Waste, Protecting Needs in Other Places and Assuring Better Accounting of Charges.

The foregoing does not include the working stocks of section foremen. These are preferably distributed by the supply car or by supply train service and, if found practicable, should be supplied from the general store rather than from the division store. However, such stocks furnished by the supply train should be invoiced on the division storekeeper of the division and incorporated in his stock balance until they are used.

Issues Confined to Daily Needs

All other small materials, such as are kept in storehouses and naturally carried to the work by the forces when they start out in the morning to the job, should be obtained daily from the storehouse by requisitions bearing the personal approval of the foreman and showing the account to be charged. Materials left over at the close of the day's work and not required for work on the following day, may be taken back to the storehouse the next morning, when drawing material for that day's work, accompanied by a credit slip for proper accounting. It is recognized that in starting out for a job that may last several days it may be best to assemble at the job all the material required, but it should be borne in mind that such assemblies of materials are liable not to be particularly well safeguarded from theft, and that men may be taken off of one job before it is completed and transferred to another job, causing the material to lie around subject to deterioration and theft. Limiting the amount of material drawn each day in such cases to the actual daily requirements therefore has its advantages. Materials required for replenishing working stocks at points outside the division

store will be obtained on a storekeeper's requisition on a division storekeeper, and shipped to the storekeeper, thus remaining in the division storekeeper's stock balance, and the requisitions for replenishing stocks will be made on the basis of the stock book showing of materials consumed, supplemented by the foreman's advice to the storekeeper, as to the requirements for the immediate future.

Ship Only When Ready to Use

The above methods apply to the small materials used on structures that can be personally carried there by the workmen. For heavy track and bridge work such as rail relaying, extending yard tracks, laying new industrial spurs, etc., a different course should be followed. The division storeyard should carry a sufficient stock of such materials, but they should be kept at the store until the workmen are actually ready to do the work. The work train will then load up from the division yard, after its return from work one day, the material it expects to use the next day, or will do this in the morning before starting out the day's program. Material not used and second hand serviceable material acquired through track changes, etc., will be brought back by the train and returned back to the yard. In this way the division will be kept practically clean of such materials, and the stocks will be kept concentrated and well taken care of by supply department forces.

In the case where a bridge gang is renewing ties on a bridge, a carload of ties will be taken to the bridge site, unloaded and drawn from until it is time to send another carload. Sometimes the renewal of ties on a large bridge, or on a long viaduct will require many car loads, and owing to labor troubles, orders for retrenchment in pay rolls, or delays of traffic, the work will extend over several months. The natural tendency of the bridge foreman or bridge supervisor, who has charge of his own stock, is to make up his estimate of the ties required for the job and prepare a requisition calling for shipment to the station where the work is done and the ties are shipped and remain until the work is finished. It is such practices, when generally indulged in by all foremen who have jobs of magnitude and who like to accumulate all material on the job before they start, that results in cluttering up a road with material, a practice which is both wasteful and unnecessary. If the supply department is permitted to handle all materials and can concentrate these large stocks in its main yards and feed the material to the job in accordance with the actual progress of the work, the concentrated stocks will in the aggregate be kept smaller, materials will be turned over more rapidly and the general appearance of the right of way and railroad property will be very much improved.

There are other objections to having large shipments of material for special jobs shipped directly to the site of the work and placed in care of the department doing the work. It frequently happens that no provision has been made for a proper place to store the material upon its receipt and it lies in freight houses and baggage rooms until the workmen are ready to proceed, suffering losses due to pilfering and deterioration. Such shipments are not likely to be unboxed and the materials counted and inspected until about the time the workmen arrive on the job and are ready to commence the work. This delays the passing of the vendors' bills for the goods as there is no proper receiving record, and invoices cannot be properly certified. The same delays and annoyances arise in handling the freight bills and relieving the station agent's accounts. Also if there is a shortage or wrong material is included in the shipment, frequently it is not discovered until the work is about to begin and delays to the work occur while the forces are held waiting for the proper replacement to be made. Therefore even though the materials may have to be handled a second time, it is much better for all material received on a purchase requisition to be received by the supply department where there is a proper organization to receive and inspect the materials and facilities provided for storage.

The successful carrying out of these plans requires the closest co-operation of the division storekeeper and the division officer who plans and carries out the work on the division. The division storekeeper must maintain the closest contact with the work in view and authorized for the division to obtain bills of the material needed to carry out the plans, and from this information and the information as to the program of work, supplemented by knowledge of the actual rate of progress as the work goes on, he will make his requisitions on the general storekeeper or purchasing agent to keep his yard properly stocked for the season's work.

There remain to be considered the so-called protection or emergency stocks, another class of material which in the aggregate amounts to a large sum. This class of material is to a very large extent inactive. It is not turned over rapidly. In fact, it may be held so long as to suffer serious deterioration. This stock can be reduced very materially on many properties by a scientific study of the problem. On most railroads, the roadway departments carry at all stations and yards of importance, spare crossings, frogs, switches, slip crossings, standpipes and parts, etc., to replace broken parts without delay. Sometimes this class of material is pretty well assembled at division headquarters, but more often it is scattered over the division and the system.

For proper handling, with a minimum of stock of such material, and a maximum of protection and availability, each division of the system should be studied fom one end to the other, each section visited and section foreman consulted, and a list prepared showing the numbers and kinds of all frogs, switches, crossings, etc. After this has been gathered and tabulated a study can be made by the division storekeeper and the division engineer, and a decision made as to just what should be carried for emergency or insurance purposes and where it should be located to best serve the greatest territory. All scattered material not on hand for immediate use can then be picked up and taken to the division storeyard. These emergency stocks should be recorded in stock books and carefully watched so that when an item is used in an emergency it will be replaced as soon as possible. From the knowledge gained by experience as time goes on, it will be found that these stocks can be further consolidated and reduced. Eventually material cars can be established and this class of spare parts carried on a car which in the case of an emergency can be moved rapidly from one part of a division to another. In the intelligent and scientific handling of this one class of materials, lies one of the most prolific means of conserving of materials and reduction in stock balances.

FREIGHT TRAIN BNY-14 of the Pennsylvania Railroad, a daily train from Buffalo to New York, has been named "The Cornucopia," in recognition of the fact that the train carries large quantities of wheat and flour from the boundless granaries of the west to the hungry millions of New York and Europe. To keep such a useful train buried under the obscurity of such a meaningless name as that which it has thus far labored under, was deemed by the railroad company highly unfair and it was decided to adopt the new name in order to give credit where credit is due.

More Detailed Commodity Statistics Proposed

THE Interstate Commerce Commission has under consideration a proposal of its Bureau of Statistics for a revision of its quarterly freight commodity statistics, by increasing the amount of information required to be compiled and furnished by the railways, which is causing some concern to many traffic and accounting officers. The suggestion is to expand the number of classifications from 70 to 158 and also to require the furnishing of information to set opposite the tonnage and carload figures for each class of the amount of freight revenue derived from the commodities embraced in that class. The present form includes both carloads and tons originated and carried for each of the 69 carload commodity classifications and less than carload freight.

Those who have seen the proposals, in which the commission is especially interested at this time because it desires the information in connection with its rate structure investigation under the Hoch-Smith resolution, take the position that the additional requirement will not only involve an expense out of proportion to the possible use of the statistics, but will produce a set of figures which will be unreliable for the purpose intended unless accompanied by a considerable amount of collateral information.

Revision of the freight commodity statistics in various ways has been under consideration by the Bureau of Statistics for several years and a somewhat similar plan was suggested in 1921, but the commission has not heretofore seen fit to adopt it. The latest proposal, however, was communicated by Chairman Esch of the commission to R. H. Aishton, chairman of the Association of Railway Executives, in a letter of July 8, with a request that the association appoint a committee to consider it. A committee consisting of three traffic officers, E. R. Oliver, vice-president of the Southern; A. C. Johnson, vice-president of the Chicago & North Western, and Archibald Fries, vice-president of the Baltimore & Ohio, and three accounting officers, E. H. Kemper, comptroller of the Southern; H. W. Johnson, comptroller of the Chicago, Burlington & Quincy, and C. E. Hildum, vice-president and comptroller of the Lehigh Valley, met on September 21 with Commissioners Esch and Campbell; M. O. Lorenz, director of the Bureau of Statistics; W. V. Hardie, director of the Bureau of Traffic, and other representatives of the commission, and pointed out several objections to the plan as they saw them. The Committee on General Accounts of the Railway Accounting Officers' Association also has asked for an opportunity to be heard on the plan. The proposed revision has been first submitted to the commission, however, to ascertain whether it desires to proceed with the plan, and the committee has been informed that if it does decide to issue the necessary order it will withhold it until the association has been given an opportunity to be heard, providing such hearing does not interfere with making the change effective by January 1.

In 1921 Dr. Lorenz asked a committee of the accounting officers' association to consider a proposal that the railroads be required to report ton-miles and freight revenue for the various classes of commodities as a special compilation for the year 1922 covering only four separate months, January, April, July and October, and also a separation of the statistics as between local and interline freight. The Committee on Freight Accounts and the Committee on General Accounts recommended that the suggested compilation be not required and the recommendation was approved by the association at its convention in June, 1922.

In 1922 the Committee on Freight Accounts estimated that the cost of the changes then proposed, covering only four months, would be at least a million dollars and that any use that could be made of the statistics by the carriers generally would not justify their compilation. The committee also felt that they would be subject to misuse in a manner that would be detrimental and unfair, also that they would be subject to such inaccuracies and erroneous conclusions as to discredit the statistics.

It was pointed out that the movement of freight traffic in the United States embraces a very large area and is diversified in its nature. Methods of waybilling vary and traffic of large volume moves under transit arrangements of various kinds by which the nature and the name of the commodity may change. Rates for certain parts of the haul are low and others high. It was therefore, believed, that any revenue ton-mile figures produced in totals, and without regard to geographical movement, would be very unreliable unless accompanied by voluminous explanations of such detail as to make the practical use of such statistics very doubtful. The statistics could not equitably or practicably be used in rate cases, the committee said, until and unless supplemented by such detail as to constitute virtually a special study for that particular purpose.

Dr. Lorenz at that time questioned the estimate of cost made by the committee, but the subject was dropped for a time. In 1926, however, it was taken up again and the commission addressed a questionnaire to Class I carriers from which it published a summary of the methods in use in compiling this class of statistics and estimates of the cost under various assumptions. The summary showed that 26 respondents were compiling more detailed statistics than required for the 70 classes of the commission's form, while 101 were not, and most of the 26 were using only a few additional classes.

It is understood that the objections made by railway officers to the plan as now suggested are substantially those summarized in the committee report in 1922 and that the present proposal would necessitate an even greater increase in clerical forces, stationery costs, enlargement of office space, additional machinery, etc. It is pointed out that the question is one as to the extent to which the statistics may profitably be expanded and the point at which the line should be drawn, because any classification involves some grouping of the 5,000 or more separate commodities. Originally the commission required reports as to only eight classes, and any classification involves a combination of separate commodities, some of which vary widely in character and as to the rates paid on them, so that the revenue figures produced would not represent the rate level or revenue contribution of particular commodities.

Some roads that formerly undertook the compilation of revenue by commodities have discontinued the practice, while others continue it only as to commodities in which they are especially interested, such as coal.

One of the arguments advanced against the requirement of more detailed statistics is that revenue statistics can be properly used only by the officers of the particular roads who are familiar with the conditions surrounding a particular class of traffic on their own lines, which may vary considerably from those of a similar class on other lines. Such figures are frequently compiled for special rate cases, but it is stated that such cases are usually concerned with the movement of particular commodities, between particular points, and that general

figures, giving the revenue from all commodities in a given classification and reflecting all movements of that class of commodities in addition to those under direct investigation, would not be indicative unless supplemented by special studies.

As such statistics would be influenced both by the higher-than-average rates which are often charged for short hauls or between points where the movement of a particular commodity is light, and by the lower rates applied between points where there is a dense movement of the same commodity, it is felt that the results would in many cases be actually misleading. Rates vary more or less according to the use to which a commodity is to be put and a given classification may include many widely varying rates. As an example of what may be done under transit arrangements, the shipments of cattle may be cited.

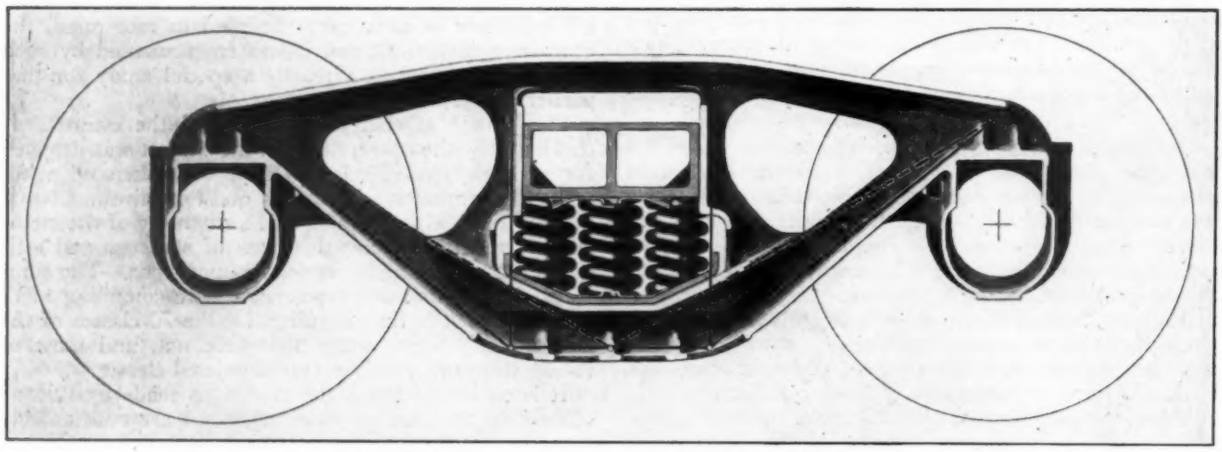
Calves from the foothills of Nevada may be moved from 1,200 to 1,800 miles to market, starting as calves and reaching the market as three or four-year old steers, at a through rate from point of origin to destination covering feeding and grading in transit, a carload of fat cattle being taken out of the feeding point for each carload of feeders taken in without possibility of identifying the shipments of fat cattle with those of feeders.

The point is made also that if the statistics are to be used for the purposes of the Hoch-Smith resolution they ought to be accompanied by some indication of the varying costs of transporting different commodities, and some emphasis is laid on the fact that, aside from the use of the statistics by the Interstate Commerce Commission, they would of course be open to many others less likely to take collateral factors into consideration and might thus lead to the filing of many additional rate complaints with the commission.

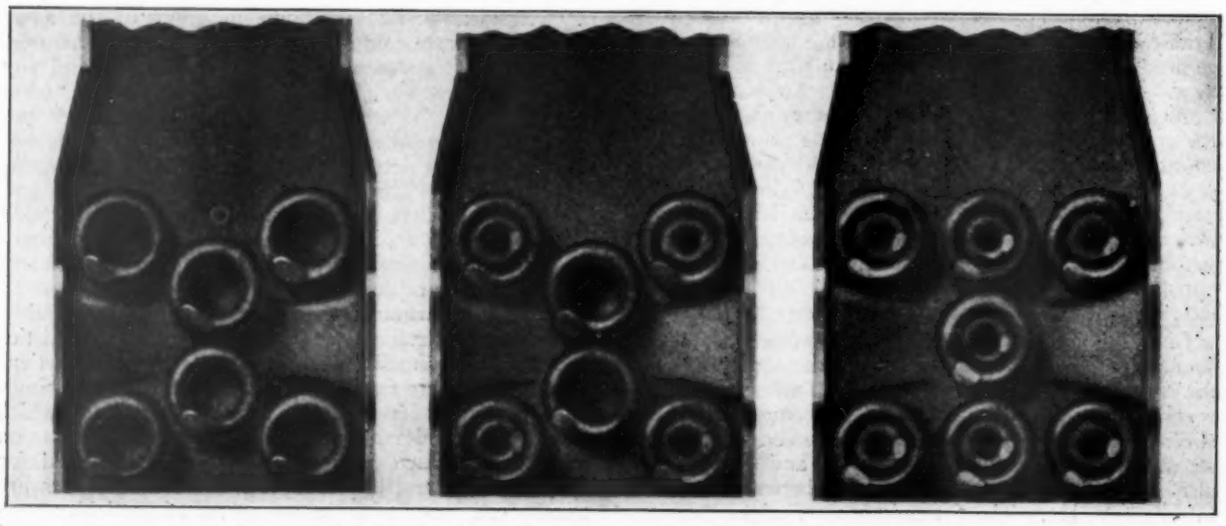
It is suggested that the commission might accomplish the purpose it has in mind by requiring the compilation for some limited period or by obtaining a special study from representative carriers that compile more detailed reports than those required for the commission's use.

Symington Double Truss Side Frame

COMMERCIAL designs of cast steel truck side frames for freight equipment usually follow the lines of a simple three-panel truss, the middle section of the lower or tension truss member serving also as a partially restrained beam carrying through the springs one-half the bolster load. This middle section is, therefore, subject to local deflection from



A Longitudinal Sectional View of the Side Frame Showing the Division of the Tension Member



Beginning At the Left, the Springs in the Symington 40-Ton, 50-Ton and 70-Ton Double Truss Side Frames

the vertical loads and as the depth of this section as a beam is limited by the standard location of the spring plank and the standard rail clearance, the increased span length between columns required for heavy capacity cars and especially for an increased number of springs, produces bending moments of considerable magnitude.

The Symington Double Truss Side Frame

In the new double truss side frame recently placed on the market by the Symington Company, 250 Park avenue, New York, the bending moments in and the deflection of the center portion of the bottom member have been reduced by supporting the middle section at its central point, thereby substituting two spans each of half the original length. This center support is secured by designing the frame with a theoretically divided tension member, the two inclined halves of the middle portion intersecting on the transverse center line of the frame, while the outer or embracing portion of the tension member follows the usual three panel contour. This division of the tension member is shown in the longitudinal sectional view of the frame.

Practical considerations prevent an actual physical division of the tension member into two or three longitudinal pieces but the metal is disposed in accordance with the double truss theory of design and the stresses and behavior of test specimens are also in accordance therewith.

Space for the inner portion of the tension members is secured by arranging the springs in an H-shaped group so that the width of the flat portion of the spring plank seat need only be sufficient to accommodate one spring on the longitudinal axis of the frame.

A. R. A. and A. R. E. Meet in New York

Car loading slightly lower than last year—Capital expenditures to reach three-quarter billion

THE annual fall meetings of the member roads of the Association of Railway Executives and the American Railway Association were held in New York on November 16 and 17. The executive committee of the Association of Railway Executives and the board of directors of the American Railway Association also held meetings in conjunction with the meetings of the member roads.

Executives' Meeting

W. G. Besler, chairman of the board of the Central Railroad of New Jersey, resigned as a member of the executive committee of the Association of Railway Executives and R. B. White, president of that road, was appointed in his place. The other members of the executive committee were re-elected. Alfred P. Thom, general counsel and S. J. Strong, secretary and treasurer, were also re-elected.

At a meeting of the executive committee which followed the member roads' meeting, R. H. Aishton, president of the American Railway Association, was re-elected chairman of that committee.

A meeting of the executive committee was also held prior to the meeting of the member roads. At that time, the executive committee discussed briefly the Parker Administration Railway Consolidation Bill, without any action being taken except to leave the matter in the hands of the law committee with instructions to press for the favorable enactment of legislation looking to permissive consolidation, contra-distinctive from compulsory. A brief unanimous report as to the progress that has already been made by the law committee in the consideration of the Parker Consolidation Bill was made verbally by Alfred P. Thom, general counsel of the Association of Railway Executives.

"With equipment in the best condition ever reported, freight traffic this year has been moved expeditiously and without transportation difficulties with indications that this uninterrupted movement of freight will continue during the rest of the year," according to the report submitted to the meeting of the board of directors of the American Railway Association by the Car Service Division of that association.

"Loading of revenue freight for the first 44 weeks this year (January 1 to October 29, inclusive), totaled 44,459,425 cars," the report continues, "a decrease of 642,291 cars or 1.4 per cent under the corresponding period last year according to the report, but an increase of 1,029,322 cars or 2.4 per cent over the corresponding period in 1925.

"The railroads so far this year have had fewer freight cars and locomotives in need of repair than ever before, while on October 15, which ordinarily marks the approximate height of the heavy seasonal fall crop and fuel movement, there were more than 153,000 surplus freight cars in serviceable condition. This was a greater number than ever reported on that day in any recent year.

"The spring wheat crop this year," according to the report, "in Minnesota, North and South Dakota and Montana has been the greatest since 1915. Montana has the largest crop in its history. Grain loading in September was the heaviest on record for any year, and at Duluth-Superior, the receipts, as well as the highest single day's unloading, have broken all previous records. For a part of the time average daily consignments to the head of the lakes were running as high as 600 cars above the average unloading at the terminal elevators and yet the railroads were able to so regulate the traffic as to avoid any congestion at the head of the lakes or serious accumulation en route, and at the same time continue to protect fully the requirements at country loading stations. The Joint Terminal Grain Committee of the

Northwest Shippers' Advisory Board functioned continuously during this movement, but its services were purely of an advisory nature inasmuch as the railroads were able to meet all transportation requirements in full.

"The fall movement of grain down the Great Lakes will cause a marked increase in demands for equipment at Buffalo to protect ex-lake grain, but the carriers serving that port are well equipped to protect all requirements. The seasonal movement of cotton in the south will present no difficulties, especially in view of the fact that the crop volume is considerably less than in any recent year. There is nothing on the horizon in connection with the box car supply to cause any concern."

In respect to coal and other open-top cars, the report said no difficulty is anticipated in adequately taking care of requirements for such cars in the fall and winter months.

"The settlement," the report continued, "reached recently in the bituminous coal fields of Illinois and Indiana has not caused any material increase in the total output of bituminous coal as the coal produced by the mines in those states since the settlement has been offset by a rather sharp curtailment in the Kentucky and West Virginia fields.

"Bituminous production from January 1 to October 22, 1927, was 426,149,000 tons, compared with 445,592,000 tons during the same period in 1926 and compared with 400,621,000 tons in the same period in 1925.

"Anthracite production from January 1 to October 22, 1927, was 65,694,000 tons, compared with 68,214,000 tons during the same period in 1926 and 61,312,000 tons in the same period in 1925.

"Dumping of coal at lower Lake Erie ports from January 1 to October 16, this year, totaled 29,093,155 tons, the highest on record for any corresponding period. This exceeded by 3,118,285 tons the best previous record made in 1923.

"Loading of sand, stone and gravel has also been the highest on record so far this year, exceeding by 6.6 per cent the total for the corresponding period last year.

"With the lake program practically completed and with the decreased loading of sand, stone and gravel, due to seasonal conditions, there should be no difficulty in adequately taking care of the requirements for open-top cars for the fall and winter months."

Total loading of grapes from California from beginning of the grape shipping season until October 25, according to the report, amounted to 66,032 cars, compared with 50,270 cars for the same period last year, an increase of 15,762 cars or 31 per cent. Up to September 15, fewer cars of grapes were shipped than during the same period last year but abnormally heavy daily loading of grapes followed September 16, greatly exceeding the highest record in previous years. On several days, according to the Car Service Division, grape loadings were in excess of 1,500 cars per day and on one day they reached 1,828 cars. This extreme increase in the loading during this peak period caused a temporary car shortage which has, however, been relieved.

Capital Expenditures

Class I railroads in the first nine months this year made total capital expenditures for new equipment and additions and betterments to property used in connection with the transportation service, amounting to $570,215,000, according to the report of the Bureau of Railway Economics.

"Capital expenditures in the first nine months this year were a decrease of $58,878,000, below those for the corresponding period last year and were the smallest for any corresponding period since 1923. On the basis of actual expenditures made in the first nine months it is estimated that total capital expenditures for the year 1927 will amount to $750,000,000, a decrease of approximately $135,000,000 or 15 per cent under those for 1926.

"Capital expended for new equipment in the first nine months this year amounted to $204,992,000, a decrease of $66,000,000 or about 24 per cent compared with the corresponding period last year. Expenditures for locomotives in the nine months' period this year totaled $53,721,000 compared with $72,324,000 in the same period in 1926, while for freight train cars the railroads have so far this year spent $104,565,000 compared with $143,265,000 in the same period last year. Capital expended for passenger train cars in the first nine months of 1927 amounted to $31,388,000. In the same period last year such expenditures amounted to $43,403,000.

"Capital expenditures for roadway and structures in the first nine months of 1927 totaled $365,223,000, an increase of $7,153,000 or two per cent compared with the same period last year. Of the total amount, expenditures for additional track this year totaled $108,002,000 compared with $124,084,000 in the same period last year. For heavier rail, expenditures amounted to $35,199,000 compared with $29,531,000 last year. Decreases compared with last year were reported in capital expenditures for both additional ballast and shops and engine houses, including machinery and tools, but for all other improvements, the railroads in the first nine months of 1927 expended $183,251,000, an increase of nearly $20,000,000 over the corresponding period of the preceding year.

"Actual capital expenditures since 1920 follow:

1920	$653,267,000	1925	748,191,000
1921	557,035,000	1926	885,086,000
1922	429,273,000	1927 Estimated	750,000,000
1923	1,059,149,000		
1924	874,743,000	Total	$5,956,744,000

Election of Officers, A. R. A.

At the regular fall meeting of the Board of Directors of the American Railway Association held on Thursday the re-election of the following members was announced:

Eastern territory—W. G. Besler, chairman of the board of the Central of New Jersey. J. M. Davis, president of the Delaware, Lackawanna & Western.

New England territory—Percy R. Todd, president of the Bangor & Aroostook.

Southern territory—W. R. Cole, president of the Louisville & Nashville Railroad. Fairfax Harrison, president of the Southern Railway System.

Western territory—C. R. Gray, president of the Union Pacific System. A. D. McDonald, vice-chairman, executive committee, Southern Pacific Company.

Among the matters considered were the reports of the Car Service Division of the American Railway Association relative to freight traffic handled so far this year and the general transportation situation; and also that of the Bureau of Railway Economics, which embodies a general economic survey of the railroad situation. Other matters considered were of a routine nature.

R. H. Aishton, who presided, was re-elected president. Alfred P. Thom, general counsel, and H. J. Forster, secretary and treasurer were also re-elected.

W. G. Besler was elected first vice-president of the board of directors of the American Railway Association and Hale Holden was elected second vice-president.

Bureau of Railway Economics Submits Report on Economic Conditions

The report of the Bureau of Railway Economics above referred to follows:

November 17, 1927.

"If the final returns for the year 1927 show the same proportionate reduction in the levels of freight and passenger rates as the first eight months, the average receipts for the year will be 16 per cent less per ton-mile than 1921 and 6 per cent less per passenger-mile. This is a measure of the contribution made by the railways, during the past six years, to the lowered cost of living of the American people.

"On the basis of the net ton-miles and carloadings reported for the past three months, the aggregate net ton-miles for the year 1927 as a whole will not be greater than 480 billion. This will represent a decline of more than one per cent under 1926. Indications are that the passenger traffic will be the lowest for any year since 1916 and will be more than four per cent under that for 1926.

"The rising tide of wage levels explains in part the inability of the railways to effect reductions in their expenses proportionate to the fall in their revenues. Since the beginning of 1926, the wage rates of various classes of railway employees have been adjusted upward, with a considerable effect on average wage rates and aggregate pay rolls. During the first eight months of 1927, average earnings per hour for all classes of employees were greater than in 1926 by 1.3 cents. Applied to the total hours of service for a typical year, this represents an annual pay roll increase—due to increased wage rates alone —of approximately $60,000,000. Demands for increased wages are still being presented and some are now under arbitration.

Taxes

"In regard to taxes, there has been a slight reduction this year, to date, under 1926 but the reduction was smaller than the decline in revenues. As a consequence, the actual ratio of taxes to revenues has increased, and stands now at the highest point ever recorded, taxes claiming 6.19 cents out of every dollar of revenue in the first nine months this year.

"The railways earned in 1926 the largest net operating income of any year in history. At the same time, they reported the largest property investment and the largest amount of freight service to the American people. This year their property investment has continued to increase, while their contribution to the welfare of the country in terms of service and of reduced rates has also been increasing. Despite this contribution, their net operating income fell more than $83,000,000 during the first nine months, while the rate of return on property investment declined from 5.22 per cent during the first nine months in 1926 to 4.61 per cent during the corresponding period in 1927.

"The increase in railway capital investment may be indicated by the fact that the railways this year, as in each of the past seven, have been improving their plant, their equipment and their other facilities by the input of large sums of new capital. As a result of these capital expenditures, and as a further development of the program to improve efficiency inaugurated in 1923, the railways this year have continued setting up new records with respect to various operating factors. The outstanding operating records follow:

1. Freight traffic this year was handled with fewer trains and locomotives in proportion to the amount of traffic carried.
2. By attaining an average speed between terminals of 12.3 miles per hour, freight trains were moved faster over a complete journey than ever before.
3. Th average load per train including freight and equipment but excluding locomotive and tender, was the highest ever reported, having been 47 per cent greater in the first eight months of 1927 compared with the same period in 1920.
4. The daily average movement per freight car was the highest ever attained.
5. Freight traffic this year was handled with the greatest conservation of fuel ever reported.
6. Condition of both freight cars and locomotives best on record.

"Adequacy of railway equipment to meet possible future increase in traffic demands is a subject open at all times to economic analysis. Light is thrown on this problem by the situation that has existed during recent months in relation to railway equipment, its physical condition and its performance.

"Reports shown that 24,392 'active' freight locomotives handled the peak carloadings in October without difficulty and with an actual margin of 3,214 stored freight locomotives or 13.2 per cent of the active number, ready to be called upon in case of any increase in traffic. This did not take into account 1,233 stored passenger locomotives and 954 switching locomotives which have been and can be utilized for freight service if the traffic demands it.

"The corresponding margin of stored over 'active' freight locomotives averaged 15.4 per cent during the first ten months of 1927 and rose as high as 18.7 per cent on August 1 when the margin was greatest. The carloadings, at this time of greatest margin, were running considerably above one million cars per week.

"Similar calculations for freight cars show that on October 15, when traffic was highest, the number of surplus cars in good repair and immediately available against an increase in traffic constituted 7.5 per cent of the number of 'active' freight cars. In other words, at the time of peak loading the freight car situation offered a margin of safety of 7.5 per cent against a possible traffic increase. The corresponding margin for the first ten months averaged 13.3 per cent, rising as high as 17.4 per cent in January.

"The locomotive margin at the peak could handle additional car loadings of nearly 7,000,000 per year. The freight car margin at the peak could similarly handle additional loadings of nearly 4,000,000 cars per year. That is, the respective margins would take care of these numbers of additional cars loaded, with equipment that was in service and in good order during the month of October.

"These ratios as to the available margins of freight cars and locomtives are computed on the assumption that no increase will take place in the performance of the average locomotive or average freight car. These factors, however, have been increasing over a period of years and it is reasonable to suppose that similar increases may continue in the future.

"There has been an increase since 1923 of more than 10 per cent in the performance of locomotives while there has also been an increase of nearly 11 per cent in the performance of freight cars.

"This indicates an added service of one-tenth of the total loadings for a year, or approximately 5,000,000 cars due to increased performance alone.

"In other words, increased locomotive performance—not per unit but per pound of tractive power—would have added virtually one-tenth to the available motive power, even had there been no increase in the aggregate units of power. Similarly, the increased performance per freight car per day has had the effect of adding one-tenth to the available supply of cars, regardless of increase in the number of cars actually in service. To the extent that these performance factors show improvement in the future, the margin of freight equipment over that actively employed in handling traffic will tend to increase.

"It is not only the number of units in service that count, but also the extent to which each unit of power or of capacity is intensively utilized."

"Are We Drifting Back Again?"*

Executive finds trend in I. C. C. regulatory policy that "cannot be for public good"

By Fred W. Sargent
President, Chicago & North Western

AMERICA'S system of railroads could never be duplicated in either China or Russia, or indeed in the United States of America itself under our present plan of regulation. Any system of regulation that dips into the details of management is not encouraging to the pioneer spirit, and our present system which recaptures and sometimes discounts the fruits of efficiency by reducing rates and increasing taxes, of course is positively discouraging to the pioneer spirit. Likewise, our present system which dictates the details of operation to an extent undreamed of when regulation began, in a large measure destroys initiative and discourages management.

Neither will encouragement be found in a policy where the fruits of efficiency are gathered promptly by the public in the form of reduced rates and increased taxes. The public, of course, should participate, but under the record to date, especially in the western territory, taken as a whole the public and the railway employees have been the sole beneficiaries. In the fifteen years ending with 1926 the total earnings of railways in western territory increased 105 per cent; operating expenses increased 120 per cent; investment increased 45 per cent; taxes increased 286 per cent; net operating income increased 39 per cent.

Now, in what I may say I have no thought of unfriendly criticism of the Interstate Commerce Commission. Indeed, I think the commission is composed of men of high character, endeavoring in good faith to discharge a public duty for the public good. The Interstate Commerce Commission today exercises powers more largely affecting the welfare of the nation than any other single department of the federal government, excepting only the President, the Supreme Court and Congress. It has been charged with duties so numerous and invested with authority so comprehensive that the mystery is it has done so well. One thing is certain, that measured by the extent of its duties and the scope of its authority its members are grossly underpaid.

I trust, therefore, I may be absolved of any thought of ill-will or personal criticism when I call your attention to a trend in the decisions indicating that we are drifting back again into a national rate-making policy that in the long view of things cannot be for the public good.

Improvement in Earnings Not Good Ground for Reducing Rates

In a recent case decided by the Interstate Commerce Commission, it concluded to reduce rates materially and as one of the grounds therefor stated: "The financial condition of the carriers principally concerned has further improved." It would therefore appear that in view of some members of the Interstate Commerce Commission, as soon as the financial condition of the carriers "improves," that fact should be cited as a basis for immediate and drastic reduction in rates.

The great bulk of railway mileage was constructed prior to 1906. In that year the Hepburn Act was passed, at a time when the railroads were in the midst of their greatest prosperity. For the next decade, whether traffic increased or not, the average percentage of return earned on property investment declined. The return on property investment for the year ended June 30th, 1907, was 5.89 per cent. By 1914 it had declined to 3.93 per cent, and in 1915 the mileage of railways in the hands of receivers increased more than in any previous year.

Immediately following the year 1906 the earning capacity and prosperity of the railways was being threatened by advancing wages and prices, and in 1910 they sought to make a general increase in freight rates. This the commission denied in a decision in 1911, and then also commenced a series of reductions, excepting only a few advances in eastern territory.

For five years preceding the 1911 decision the average amount annually invested in the railroads was $638,000,000. By 1916 this annual investment declined to less than $250,000,000. The evidence of this decline in investment was apparent in the decline of physical development. Whereas in the five years ending with 1911 the number of locomotives in service increasd 10,271, in the next five years they increased only 2,851. In the five years ending with 1911 the number of freight cars increased 371,083, whereas in the five years ending with 1916 they increased only 104,381.

It is true that the decline in the number of locomotives and freight cars was greater than in the tractive effort and carrying capacity, but nevertheless there was a large comparative percentage decrease in the tractive effort of locomotives and carrying capacity of cars. For instance, from 1905 to 1910 the tractive effort increased 39.21 per cent, whereas from 1910 to 1916 it increased only 28.32 per cent. From 1905 to 1910 the carrying capacity of freight cars increased in excess of 44 per cent. For the period 1910 to 1916 the carrying capacity increased 21.8 per cent. And these figures are indicative of the decline that occurred in the development of all parts of the railroad plant as a direct result of the rate attitude and other restrictive regulatory measures imposed upon the cariers during this period.

Then came the war. There developed a large increase in freight business. Railway managements in 1917 organized to deal cooperatively with the situation. But in spite of all efforts a shortage of 100,000 cars developed by the fall of 1917. Then came government operation, but the facilities of the railways proved unequal to the demands of traffic. The history of transportation during that period ought not soon be forgotten. It is well known, however, that the public memory is short, and the value of our railroad systems as first lines of defense is likely to become a matter of small concern until another great emergency confronts us.

Secretary Hoover has estimated that every large car shortage has cost the nation at least a billion dollars. The savings in freight rates made for the public by the

*Abstract of paper read at annual dinner of the Railway Business Association at the Hotel Commodore, New York, November 16.

policy of regulation which resulted in the decline of railroad development in the years preceding our entrance into the war were small compared with the losses to the public by the prolonged shortage of transportation facilities.

Change of National Policy Evidenced in 1920

Congress, recognizing the situation for the first time since regulation began in 1887, realized the necessity of some constructive measures, and in 1920 passed the so-called Transportation Act, which for the first time incorporated into the Interstate Commerce Act a recognition of the constitutional right of the carriers to a basis of rates that would provide a lawful return and thereby stimulate investments, looking to a rehabilitation of the property.

The railroads accepted this act as an evidence of a change in the national policy, and in the years 1920 to 1926, increased their investment by more than four billions of dollars. The result is the most efficient service ever known, at the lowest average rates in all the world.

That is where we are.

Railway managements are loath to believe that the public intends to break faith and revert to the policy that prevailed before the war. There are, however, certain barometers which indicate that consciously or unconsciously, we are drifting that way.

There seems to be in certain quarters a demand for the repeal of Section 15-a. And why? Why should anyone desire to repeal a law which directs the commission to fix just and reasonable rates which will produce "as near as may be" a fair return upon the property of the stockholders and bond holders devoted to the service of the people in providing the nation's railroad transportation facilities? Obviously there is but one answer. And that is that some stand ready to repudiate the assurance given in 1920, and thereby encourage the commission to fix rates that will not produce a fair return upon the fair value of the property. The law has been in effect seven years. In only one year have the railways as a whole earned what the commission has defined as a fair return, and the western group of roads has never approached it.

Nevertheless, to repeal a law which only directs the commission to do what the constitution requires it shall do, would be equal to a legislative invitation to ignore the supreme law of the land and fix rates on a basis that would not produce such fair return. To repeal Section 15-a under these circumstances would result in curtailment of all classes of expenditures and a policy of drastic retrenchment, at least until such time as the effect upon the commission should be demonstrated by the trend of its decisions.

Use of Hoch-Smith Resolution

Another barometer which indicates that we may be drifting back again is the series of rate reductions that have taken place since 1921, and those that have recently been made and are still further contemplated under the Hoch-Smith resolution. The reductions already made have been severe and have cost the carriers many millions of dollars.

The carriers in certain regions have been able to withstand these reductions, but in other sections of the country they have so reduced the level of earnings as to threaten the credit of many carriers, and offer little hope for some in the way of even a meagre return for many thousands of stockholders.

The 68th Congress passed what was designated as public Resolution No. 46, approved January 30th, 1925, and is commonly known as the Hoch-Smith resolution. A recent construction by the Interstate Commerce Commission of the terms of this resolution, if adhered to in future cases, will challenge the serious attention of all thoughtful citizens interested in maintaining an efficient system of transportation.

It is not my purpose to in any manner criticise the decisions of the Interstate Commerce Commission. Indeed, the proper place to question the ultimate conclusion of the commission is before the commission itself and not here. Nevertheless, some of the principles announced are of far reaching importance and can be discussed without questioning the ultimate decision of the commission, because the commission cited other reasons for its conclusion than those to which I will refer in the case I wish to call to your attention. It is important, however, that you be made conversant with the principles recently enunciated in construing the so-called Hoch-Smith resolution in the recent case known as No. 19130, California Growers' and Shippers' Protective League vs. the railways, decided as late as July 20th, 1927.

The commission had only a short time before in a similar case found that the existing rates were reasonable. One commissioner in concurring in the reduction prescribed said: "While it is by no means clear that the rates at issue are unreasonable and ought to be reduced, complainant is entitled under the Hoch-Smith resolution to the benefit of the doubt, and I can for that reason accept the results reached." The majority opinion which materially reduced rates, cited among others the following reasons for their action, and I quote from the language of the opinion:

In referring to the former decision wherein it was held that existing rates were reasonable, and which had been a short time previously decided, the commission said: "The complaint in the former case was filed and hearing held prior to the time of the resolution." The commission also said: "While undoubtedly overproduction and distributing practices are factors in the situation (here referring to the depressed condition of the industry), the essential fact still remains that the industry is in serious financial straits." The commission also said: "The resolution (referring to the Hoch-Smith resolution), is in effect a direction to us to give agricultural commodities affected by depression the lowest rates that it is possible to give without running counter to the provisions of the Interstate Commerce Act and carriers' rights under the constitution." The commission also said: "The primary issue to be determined, therefore, is whether the rate assailed approaches the lowest limit or level of the zone of reasonableness permitted by the flexible limit of discretion reposed in us." It also said: "The important differences in conditions that have taken place since the hearing in the prior case may be summarized briefly as follows:

1. 'The Hoch-Smith resolution was approved subsequent to the presentation of the prior case.
2. 'The depression in the deciduous fruit industry has continued unabated for a further period of three years and conditions in 1926 were worse than in 1923. In the former decision our division found that the record did not justify the conclusion that the unfavorable financial conditions were likely to continue.
3. 'The present economic showing is fully responsive to the terms of the resolution.
4. 'The financial condition of the carriers principally concerned has further improved.'"

One commissioner in concurring said: "The Hoch-Smith resolution (which governs the disposition of this case) contains other injunctions to us besides that which requires the lowest possible lawful rate on prod-

ucts of agriculture suffering from depression. Twice the resolution instructs us that in adjusting rates care shall be taken to maintain an 'adequate system of transportation.' If these words mean anything they mean that, broadly speaking, we must shift some of the burden now borne by agricultural products suffering from depression to other classes of traffic."

If the principles enunciated are to constitute the guiding factors in fixing the rates on agricultural products, then the problems confronting the granger railroads may be mildly defined as serious, especially in those great regions where the products of agriculture constitute so large a proportion of the total tonnage, and thereby the gross revenues, that material reductions in rates could not be overcome by any attempt to shift the burden to other classes of commodities.

Results of Efficiency

If an improved financial condition of the carriers constitutes a basis for reducing rates, and if rates are to be placed at the lowest possible lawful level so as to barely avoid confiscation, then economies and efficiency in operation will avail the carriers nothing. It simply means that as the carriers become more efficient from year to year, as they practice greater economies, thereby improving their financial situation, that all the benefit resulting therefrom will under such a doctrine immediately be transferred to the shipping public through the process of further reductions in rates.

In the beginning I referred to the fact that there is a growing tendency to deprive the carriers of the fruits of efficiency by reductions in rates, and even in some instances by discounting anticipated prosperity which it is hoped the carriers may achieve.

The case to which I refer is directly in point. It is admitted that the carriers are not earning a fair return, but the fact that they have improved their condition is cited as a reason for reducing rates, and the Hoch-Smith resolution is construed to mean that the commission is charged with reducing rates on agricultural products to the lowest lawful level. This means, in other words, simply keeping within the constitution by avoiding confiscation. If these principles are to be adhered to in rate making in the future, then the commission will in practice have repealed the mandate of Section 15-a, and further legislative acts in this regard would seem wholly unnecessary. If these enunciated principles are to constitute cardinal reasons for the further reduction of rates at a time when it is conceded that the carriers are not earning a fair return, then it is clearly apparent that we are drifting back again to the condition that prevailed immediately preceding the taking over of the railroads by the government during the late war.

Curtailment

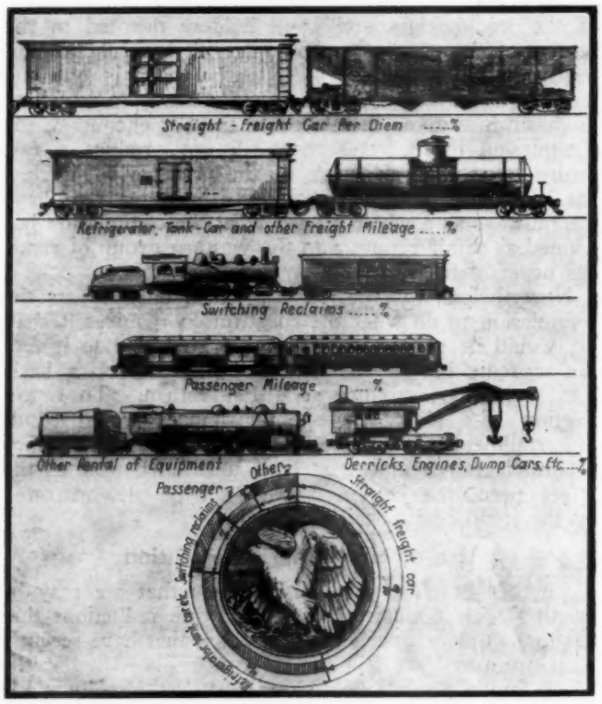
It means drastic curtailment all along the line, and in the end cannot be other than harmful to the very class of industries that the Hoch-Smith resolution was designed to help. No large section of our country can long be prosperous that does not have prosperous railroads, and railroads cannot be prosperous whose rates are fixed at the lowest possible lawful level so as to barely avoid the charge of confiscation under the constitution.

The railroads constitute the greatest single industry in America. They, and the companies directly dependent upon them for business, constitute our largest contributors to prosperity. The largest part of the money the railroads collect is immediately paid back to the people in the form of wages, taxes and the purchase of supplies and materials. To cripple this industry by a system of rates that must be reduced every time the railroads improve their financial conditions, means a serious blow to the prosperity of our common country and a loss to the shippers themselves in the long run that is bound to greatly exceed any immediate gain in the reduction of rates.

It is to be hoped that the commission in future cases will place as great emphasis upon those provisions of the Hoch-Smith reslution which require the adequate maintenance of transportation, as they now seem to place on the clause which requires the lowest possible lawful rates, so that the carriers may go forward in the coming years as they have in the last seven years, with expenditures of money looking to the adequate maintenance of their property, the acquisition of new and more equipment, and the construction of additions and betterments, all of which are dedicated to the service of the people.

Per Diem Education on the Seaboard Air Line

IN order to keep the employees alive to car-values, the Seaboard Air Line makes frequent mention of the important subject of per diem. A weekly mimeographed magazine is published on each of the ten operating divisions, in which matter of local and general interest is brought to the employee's attention. It is through this medium that the employees are educated as to how per diem charges are assessed and how such charges may be reduced. The drawing reproduced in the accompanying illustration appeared in these magazines a short time ago and attracted much attention. It is valuable in that it gives an idea of per diem expense in an easily understood and graphic manner.



One of the Seaboard Air Line's Recent Graphic Illustrations of the Value of Per Diem

Looking Backward

Fifty Years Ago

Fred D. Underwood, a conductor on the Chicago, Milwaukee & St. Paul, was elected a director of the Railway Passenger and Freight Conductors' Mutual Aid and Benefit Association of the United States and Canada at the third annual meeting.—*Railway Age,* November 22, 1877.

The question of the extension of the Chicago & Alton from its present terminus near St. Louis, to Kansas City has been submitted to the shareholders and a large majority have returned a favorable answer. With the present low price of materials and labor it is believed that the 162 miles can be constructed at a cost not to exceed $3,000,000.—*Chicago Railway Review,* November 17, 1877.

J. Blickensderfer, chief engineer of the St. Louis & San Francisco, returned to St. Louis on November 5 after making a three months' horseback reconnoissance of the country between Vinita, I. T., and the Double Mountain river in Western Texas with a view to extension of the Frisco from Vinita to a connection with the surveyed Texas & Pacific near the New Mexico line, about 430 miles. The original survey of the Frisco was directly west from Vinita to California. Mr. Blickensderfer represents the country as desirable for grazing, coal mining and lumbering.—*Railroad Gazette,* November 16, 1877.

Twenty-Five Years Ago

Special provision for the shipment of California perishable products to Chicago and New York was inaugurated on November 17 when the Wells, Fargo & Co.'s Express began semi-weekly refrigerator car service on passenger trains. Tri-weekly service will be arranged if the business justifies, it was said.—*Railway and Engineering Review,* November 22, 1902.

In a letter to a Chicago newspaper M. A. Knapp, chairman of the Insterstate Commerce Commission, points out that under the interstate commerce and anti-trust laws suits against the railroads have operated to restrain competition while suits against the packers have operated to restrain combination. He declares that if rival carriers are forbidden to put into effect reasonable traffic agreements some form of consolidation is sure to follow.—*Railway Age,* November 21, 1902.

The Chicago Great Western has brought suit to compel the Union Pacific to give it joint use of the Missouri River bridge between Council Bluffs, Iowa, and Omaha, Neb., and entrance into the latter city and the stockyards at South Omaha. Seven lines now share these gateway privileges and it is the contention of the Great Western that the Congressional Act of 1871 under which the bridge was constructed makes it imperative that all railroads be allowed its use.—*Railway Age,* November 21, 1902.

Ten Years Ago

C. E. Denney, special engineer of the New York, Chicago & St. Louis, has been appointed assistant to the president, with headquarters at Cleveland, Ohio.—*Railway Review,* November 17, 1917.

The Philadelphia district committee on car service has placed an embargo on all shipments of less-than-carload freight between points within the corporate limits of that city and upon reconsignment within the city limits to aid the transportation of war material to manufacturing plants.—*Railway Age Gazette,* November 16, 1917.

The New Jersey Board of Public Utility Commissioners has issued a report denying the petition of the Central Railroad of New Jersey for authority to withdraw the sixth man from the crews of certain passenger and freight trains during the war period.—*Railway Age Gazette,* November 16, 1917.

New Books

Books and Articles of Special Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

Books and Pamphlets

Comparative Statement of Operating Averages Class I Steam Railways in the United States, Six Years, 1926-1921, by Bureau of Statistics, Interstate Commerce Commission. Statement No. 27200 (Fifth in the series). 159 p. Pub. by U. S. Govt. Prnt. Off., Washington, D. C., $1.

Historic Railroads, by Rupert Sargent Holland. Popular treatment of the usual and some of the more unusual features of railroad history. Well illustrated. 343 p. Pub. by Macrae Smith Co., Philadelphia, Penna. $4.

Lincoln and the Railroads—A Biographical Study, by John W. Starr, Jr. A distinctive and long-wanted contribution to railroad history that is of further interest because the author is himself a railroad man. Illustrations from old photographs, prints, and facsimiles of manuscripts and documents. 325 p. Pub. by Dodd Mead & Co., New York City. $3.

Per Diem—Its Adoption in 1902, by Arthur Hale. Another distinct contribution to railroad history but in entirely different form for this pamphlet is the reprint, with a foreword, of Mr. Hale's testimony in the case involving rules for car hire settlements before the Interstate Commerce Commission. As chairman of the Per Diem Arbitration Committee the author supervised the introduction of the system and its development for the first fifteen years. 58 p. Pub. by American Short Line Railroad Association, Washington, D. C. Apply.

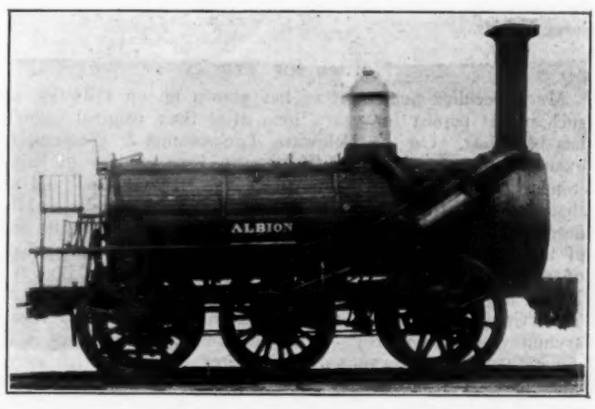
Periodical Articles

Airway Distances in the United States. An attached map makes this table of distances all the more helpful. Information Bulletin No. 11, Air Information Division, U. S. Dept. of Commerce, November 1, 1927.

Economics of Motor Freight Transportation, by Roy T. Wells. The special field of this type of transport and the possibilities of its co-ordination with other types. Truck operating costs and mileage are given. Harvard Business Review, October, 1927, p. 11-19.

Rail Bonds at High Point, by A. J. County. Brief review of railway financial history since 1920 with some suggestions for the future. Savings Bank Journal, November, 1927, p. 9-12, 51.

The Railroad Situation, by Frederick Hanssen. Summary of recent developments. Financial World, November 9, 1927, p. 646, 654.



An Early Canadian Locomotive

Odds and Ends of Railroading

A few weeks ago some Canadian railroad men were complaining at the establishment of 65 as the age of retirement, saying that it was a shame to put a youngster of that age "on the shelf." Over in England the unions are endeavoring to have the age limit reduced from 65 to 60. What is the cause of the varying point of view?

Look Before You Land

On October 31, an air mail plane piloted by Walter C. Hopson, made a forced landing on the tracks of the Reading near Hadley Airport, N. J. The plane was demolished a few minutes later by a freight train. Hopson, however, crawled out to safety before the train hit the plane. According to reports, this is the first collision between a locomotive and an airplane on record. If this is an indication of what the future has in store, the inventors of safety first slogans will have to include "Look Before You Land" with "Stop, Look and Listen" and "Cross Crossings Cautiously."

The Last Stand of a Once Renowned Sex

Ardent suffragists will probably be amazed to know that despite the recent amendment granting them equal rights, there are still some regularly scheduled passenger trains on which they cannot ride. For example, there are trains 753 and 754, which operate on the Northern Pacific between Wahpeton, N. D., and Oakes, on a tri-weekly schedule. A note in the timetable states: "These trains handle male passengers only." The reason for this seemingly anti-feminist note is that these trains are for workmen only and such ladies as wish to ride between Wahpeton and Oakes are taken care of on a daily train. Even so, the conductor of one of these "Men Only" trains might find some difficulty in keeping a 195-lb. daughter of the prairies off the train if she happened to be really determined to ride.

A Trade List for the Sleuths

No city with a population of 50,000 would ever consider itself cheated if it could swap its police department, lock, stock and patrol wagons, for the police organization of any one of the railroads entering Boston, says the Boston Post. In the last decade the railroads have so developed their own police departments that today they are considered models of efficiency. Years ago a railroad policeman was the cranky watchman who chased youngsters away from the freight yards. Today railroad police officers, for the most part, are trained detectives who could easily land jobs as specialists with any police department or detective agency. Every railroad today has its force in perfect contact with that of every other railroad so that a crook choosing any railroad line for his operations will find that his activity and description have been sent ahead of him as far as he can be carried on an American and Canadian line and most of the railroads are covered right to the steamship docks in all the larger cities.

Names for Tracks

Much peculiar nomenclature has grown up on railways, and such names persist for years, long after their original meaning has been lost. On the Delaware, Lackawanna & Western, for example, a train that used to require four engines to handle it many years ago is still known as the "Home Run," and one that required three engines is called the "Three-Base Hit," despite the fact that one engine is now sufficient to handle each of these trains. Another peculiar example of this naming habit of railway men is to be found in the yards of the Boston & Maine at Boston. Here practically every track has a name. The "Crazy" track takes its name from the fact that a lunatic asylum was once nearby. The "Bughouse" track serves a fumigation plant where bugs are eliminated from Egyptian cotton. The "Brewery," "Distillery" and "Rummy" tracks are reminiscent of bygone days. The origin of the names of tracks such as "Right Hand," "Two Below," "Rocky" and "Jeezaboh," is lost but they are still known by those names. "Nunnery Hill" and "Prison" tracks still retain their names, although the convent and penitentiary which were responsible have long since disappeared. Tracks constructed on filled-in land still bear appropriate names, such as "Pond," "Ocean," "Gulf," and "Lobster." That some of the switchmen were from New York is evidenced by the track names of "Broadway," and "Fifth Avenue," while another track is called: "The Little Track Around the Corner."

Progress of Institute of Transport

The Institute of Transport, the British professional society with members from the railway, highway, airway and marine fields is apparently enjoying a healthy growth. Says Modern Transport (London):

"Seven years ago an institute was formed for the study of the 'science and art of traffic and transport.' To-day it embraces approximately 3,000 members and has already developed a number of important local sections. There are five in this country —the North Western, Midland, Yorkshire, North Eastern and Western—one in South Africa, and one in the Argentine, and further sections are contemplated in Scotland and Wales. These and other developments of the Institute of Transport were referred to on Monday evening last by Mr. Roger T. Smith in his presidential address, of which a summary appears in our present issue. In the short period of its existence the Institute has made good progress; it would have made still better headway had there been an absence of that suspicion which is invariably engendered when one seeks to reconcile competing elements. In this connection the quotation by he new president of the remarks of Charles Lamb was an apt one. Once when Lamb was abusing a man in quite unmeasured terms, a friend of both expostulated, declaring that he barely knew the man. 'Of course I do not know him,' said Lamb, 'how could I hate him if I did?'"

How Do You Know He Carries a Pass?

What is it that enables one railroad man to recognize another in a crowd? There is some subtle distinction which marks the man who spends a few years in the peculiar restless din of a railroad in operation. E. L. Gill, chief divisional correspondent of the Pennsylvania News (Eastern Region), discusses this distinctive mark in a letter appearing in Bob Dee's column in that journal. Unfortunately, however, he does not seem to be able to name this characteristic, or even describe it closely. Quoting a friend, he says:

"There is a something, 'Dick' contends, that labels a railroad man for just what he is and sets him apart from other humans, as a man of the rail. That something is IT.

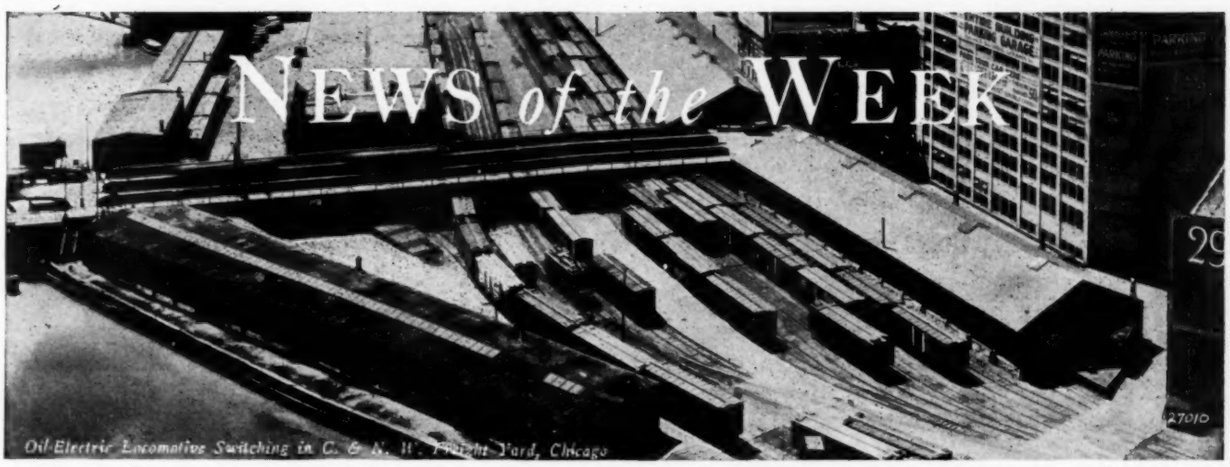
"Dick's theory stands up under a lot of testing. He explains it with several illustrations. The conductor comes through the coach and the chap across the way with his wife reaches quickly for his pass. You never saw that couple before, but you knew they were going to flash an annual on the conductor. They have IT.

"You are waiting for your train in Broad Street Station. A tall, slender gentleman approaches and borrows a match. He's a railroader. You identify him on sight. He has IT. And he approaches you for the match because he knew you belonged. Evidently you have IT.

"It is not personality. There are all brands of that on the railroad. It can't be personal appearance. A group photograph of railroad men would leave little to any man's imagination. But it is something. A definite something that labels the railroad man as surely as a badge labels a delegate to a convention. It is recognized and accepted. Either consciously or unconsciously, railroaders identify one another by it. Yet no one has ever named it.

"What is IT?"

This department thinks that Mr. Gill has propounded an interesting question. Is there an answer?



GEORGE SPENCE, member of the House of Commons for Maple Creek, Sask., has been appointed minister of railways in the Saskatchewan government.

C. J. LAURISCH, an attorney of Mankato, Minn., has been appointed as a member of the Minnesota Railroad and Warehouse commission, effective January 1. Mr. Laurisch succeeds I. Bowen who has resigned.

THE CHICAGO GREAT WESTERN was operated throughout the month of October without a reportable injury to any employee, thereby establishing a new record for the system and probably surpassing all records of railroads comparable to the C.G.W. in size. The Oelwein shops recently closed a record of 402 consecutive days, with 3,085,156 man hours, without a reportable injury. It is believed that this is a performance never equaled in any railroad shop. The northern division has already gone 105 days without a reportable injury, while the eastern division has a record of 44 days.

New York Railroad Club Annual Dinner

The New York Railroad Club will hold its annual dinner at the Hotel Commodore, New York, on the evening of December 15. The principal address of the evening will be delivered by H. F. Guggenheim, president of the Guggenheim Fund for the Promotion of Aeronautics, who will speak on Transportation by Air. Other persons of prominence in the field of air transport will be present.

I. C. C. Commissioners Confer with President

Commissioners Meyer and Hall of the Interstate Commerce Commission conferred separately with President Coolidge at the White House on November 10, at the request of the President. Commissioner Hall said afterward that he had advised the President some time ago of his desire to retire from the commission but that he did not expect to leave until his own docket was cleaned up because the commission is burdened with an unusually large amount of work, and that the date had not been determined.

Group Insurance on Rock Island

The Chicago, Rock Island & Pacific has increased its group insurance for employees from $25,000,000 to $60,000,000. This is brought about by doubling the policy for each employee and by increasing the number of employees insured to 30,000. Under the new plan all employees with six months' service or over are now eligible for $2,000 life insurance, $2,000 accidental death or dismemberment insurance and $15 weekly sick and non-occupational accident benefits as compared with $1,000 life, $1,000 accidental and $10 weekly benefits under the former plan. The entire program is co-operative, the railway company and the employees sharing the cost.

The Women's Aid

The "Women's Aid" associations of the Pennsylvania Railroad are now engaged in their usual autumn demonstrations. At Trenton, N. J., on Friday and Saturday, October 14 and 15, a fair with social gatherings, extending over the two days, attracted about 16,000 people and the "Aid" of the New York grand division netted about $23,000 from the enterprise.

The Women's Aid of the Philadelphia division held its fourth annual card party and dance in Harrisburg, Pa., on October 26 and 27 with attendance aggregating 1,200. This entertainment included a "carnival," and various prizes were awarded including an automobile to a man in the freight department.

S. O. Dunn Addresses Chicago Car Foremen

At the regularly monthly meeting of the Car Foremen's Association of Chicago, held November 14 at the Great Northern hotel, Chicago, the principal address was made by Samuel O. Dunn, editor of the *Railway Age*, on car department work and its relation to railroad operation as a whole. The meeting was presided over by E. H. Meckstroth, general car foreman of the Baltimore & Ohio at Chicago, and recently elected president of the association. Mr. Dunn emphasized the great investment which the railroads have in car equipment, the large sum spent annually for labor and material in the maintenance of this equipment, and the proportionately large responsibility of car foremen and other car department officers for the efficient operation of this vital part of the railroad plant.

K. C. S. Valuation Case Before Supreme Court

Argument is to be heard by the Supreme Court of the United States in the week beginning November 21 on the appeal of the government and the Interstate Commerce Commission from a decision of the district court of the western district of Missouri setting aside the commission's valuation of the Kansas City Southern. In a brief filed on behalf of the road attention is called to the importance of a settlement of the valuation controversy and the court is asked to give a final interpretation of the lawfulness or unlawfulness of the construction now being placed on the valuation law by the commission in its manifold administrative work. The company challenges the government's contention that the issue presented in this case has been decided by the court in the Los Angeles & Salt Lake case.

New Boston & Maine Station at Boston

A "New North Station" is the subject of a bulletin issued by the Boston & Maine on Tuesday last, an extensive enterprise already begun. The new building is to contain a "coliseum" suitable for conventions and sports, which is to be the feature of the second story. The building is to be on the site of the present North Station and it is said that it will be ready for use by July 1, 1928.

The coliseum, to seat 18,500 persons, is to be leased to a group of capitalists, of whom one is G. L. Rickard, of the Madison Square Garden, New York.

The Boston & Maine has already begun the expenditure of $1,100,000 on preliminary construction work, and the cost of the whole enterprise is variously stated at from four to ten millions. The main waiting room of the station will have 500 seats.

The building's front will measure 700 ft. on Causeway Street, which street is to be

(*Continued on page* 1012)

Revenues and Expenses of Railways

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1927

Name of road		Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net ry. operating income.	Net ry. operating income, 1926.
Akron, Canton & Youngstown	Sept.	171	$258,954	$291	$276,808	$39,079	$28,633	$11,685	$78,654	$13,001	$171,052	61.8	$105,756	$98,691	$63,688	$59,999
	9 mos.	171	2,333,507	3,007	2,439,232	362,617	284,714	102,663	692,809	131,154	1,573,688	64.5	865,544	726,283	437,467	319,576
Atchison, Topeka & Santa Fe	Sept.	9,449	13,745,580	3,131,193	18,402,883	2,937,799	3,695,878	367,336	4,765,253	400,634	12,045,731	65.5	6,357,152	4,702,111	4,724,278	7,015,128
	9 mos.	9,421	108,518,637	29,914,095	150,574,996	26,200,780	30,072,115	3,584,678	44,515,504	3,588,655	107,334,720	71.3	43,240,276	30,729,025	30,642,266	37,139,065
Gulf, Colorado & Santa Fe	Sept.	1,944	2,343,761	251,244	2,748,869	375,893	441,714	52,483	798,710	78,682	1,701,944	61.9	1,046,925	829,913	730,272	927,597
	9 mos.	1,944	22,213,978	2,114,420	25,520,606	4,762,015	5,271,795	486,523	8,379,412	641,407	19,408,104	76.0	6,112,502	5,220,940	3,680,591	3,816,115
Panhandle & Santa Fe	Sept.	954	903,032	126,856	1,111,491	190,031	229,172	11,073	351,658	29,464	765,542	68.9	345,949	297,626	224,400	467,756
	9 mos.	954	9,342,603	1,184,362	11,249,559	1,858,947	2,397,666	102,106	3,838,106	247,634	8,104,047	72.0	3,145,512	2,758,862	1,764,573	3,318,085
Atlanta & West Point	Sept.	93	190,979	62,358	284,345	30,231	44,127	12,770	95,033	12,829	199,195	70.1	85,150	61,176	44,184	45,688
	9 mos.	93	1,532,243	554,622	2,367,734	268,608	406,948	105,950	866,823	124,135	1,814,175	76.6	553,559	405,061	272,028	320,641
Western of Alabama	Sept.	133	202,247	58,411	286,504	27,312	49,333	12,862	89,270	13,047	195,942	68.4	90,562	73,177	82,556	64,529
	9 mos.	133	1,608,526	515,172	2,343,251	317,734	470,189	110,144	755,997	118,473	1,810,236	77.3	533,015	400,352	429,302	520,040
Atlanta, Birmingham & Coast	Sept.	639	370,381	39,527	454,883	100,650	73,598	29,806	158,654	17,905	391,432	86.1	63,451	49,180	38,091	32,424
	9 mos.	639	3,282,740	321,605	3,975,345	950,495	747,252	255,032	1,523,247	164,249	3,741,779	94.1	233,566	104,682	—27,230	138,710
Atlantic Coast Line	Sept.	5,095	4,192,854	921,872	5,595,228	1,027,760	1,471,128	159,158	2,205,049	168,815	5,067,942	90.6	527,286	25,880	230,784	714,089
	9 mos.	5,071	44,702,745	11,925,404	61,532,309	9,628,958	12,760,377	1,443,553	22,550,619	1,603,547	48,446,705	78.7	13,085,604	8,599,230	8,710,200	13,552,984
Charleston & Western Carolina	Sept.	342	256,765	16,457	283,577	42,765	46,244	7,681	105,901	6,937	209,528	73.9	74,049	56,507	55,335	36,295
	9 mos.	342	2,456,253	149,705	2,707,067	569,279	400,870	66,352	1,024,172	62,133	2,122,800	78.4	584,267	403,598	364,380	475,471
Baltimore & Ohio	Sept.	5,642	17,672,330	2,405,035	21,506,667	2,600,176	3,919,718	486,242	7,337,102	829,203	15,364,515	71.4	6,142,152	5,125,618	4,885,458	5,344,113
	9 mos.	5,642	155,722,173	19,859,781	187,325,066	22,462,041	39,466,250	4,258,143	65,621,005	6,222,148	139,707,992	74.6	47,617,074	38,415,314	36,304,614	37,519,714
Baltimore & Ohio Chicago Term.	Sept.	75	.....	.....	341,434	39,096	32,714	2,271	157,744	14,338	250,543	73.4	90,891	28,536	125,758	123,479
	9 mos.	75	.....	.....	2,941,729	369,577	345,478	20,848	1,472,802	143,585	2,395,036	81.4	546,693	52,654	870,985	995,731
Staten Island Rapid Transit	Sept.	23	131,285	133,704	311,469	36,306	18,401	2,019	113,453	15,610	185,789	59.6	125,680	108,190	68,720	44,517
	9 mos.	23	992,427	1,167,018	2,494,656	356,906	183,964	18,326	1,004,739	139,659	1,703,594	68.3	791,062	617,203	272,452	91,200
Bangor & Aroostook	Sept.	613	414,564	44,948	485,917	103,491	88,700	6,208	131,564	28,752	362,205	74.6	123,712	82,637	113,093	214,645
	9 mos.	613	4,650,069	530,812	5,420,637	956,399	1,021,042	52,670	1,392,049	222,928	3,675,199	67.8	1,745,438	1,309,530	1,490,931	1,299,994
Belt Ry. Co. of Chicago	Sept.	32	.....	.....	655,716	56,443	69,833	3,652	271,576	9,671	411,175	62.7	244,541	196,368	145,844	187,456
	9 mos.	32	.....	.....	5,573,288	490,865	570,325	31,741	2,451,824	88,524	3,633,279	65.2	1,940,009	1,509,434	1,282,405	1,516,811
Bessemer & Lake Erie	Sept.	227	1,435,351	14,511	1,470,286	111,212	329,939	14,275	344,424	30,969	834,967	56.8	635,319	553,687	568,761	948,413
	9 mos.	227	10,396,389	113,053	10,699,408	1,075,441	2,908,122	133,540	2,951,344	309,829	7,281,850	68.1	3,417,558	2,848,435	3,133,075	4,812,707
Bingham & Garfield	Sept.	33	34,477	.....	35,595	9,987	6,434	1,397	9,196	4,123	31,204	87.7	4,391	—3,229	13,832	19,193
	9 mos.	33	361,754	.....	372,173	78,839	84,480	12,676	90,050	44,618	311,630	83.7	60,543	—4,042	143,911	176,243
Boston & Maine	Sept.	2,113	4,269,961	1,784,703	6,929,157	1,243,451	1,211,285	84,173	2,393,014	198,328	5,150,191	74.3	1,778,966	1,474,456	1,230,247	1,251,158
	9 mos.	2,113	37,278,341	14,283,688	58,441,193	8,153,800	11,051,537	723,815	22,227,944	1,942,107	44,243,811	75.7	14,197,382	11,515,332	9,384,318	10,104,856
Brooklyn Eastern Dist. Terminal	Sept.	9	111,823	.....	117,565	12,408	12,559	150	44,207	7,010	76,334	64.9	41,231	34,892	35,812	47,675
	9 mos.	9	1,032,127	.....	1,087,385	93,481	119,248	5,012	410,076	56,907	684,724	63.0	402,661	340,632	341,552	396,748
Buffalo & Susquehanna	Sept.	253	117,271	1,385	123,968	31,854	50,934	1,707	40,404	7,941	132,840	107.2	—8,872	—10,976	4,527	—3,905
	9 mos.	253	1,101,227	16,181	1,165,074	258,908	459,935	15,359	385,379	71,271	1,190,852	102.2	—25,778	—44,682	107,042	—23,647
Buffalo, Rochester & Pittsburgh	Sept.	601	1,379,868	91,957	1,533,842	248,455	480,740	27,542	553,665	44,473	1,357,263	88.5	176,579	156,579	189,815	314,998
	9 mos.	601	11,967,836	840,848	13,284,620	1,670,498	4,314,365	263,443	5,045,403	411,049	11,726,943	88.3	1,557,677	1,137,256	1,291,694	2,448,509
Canadian Pacific Lines in Maine	Sept.	233	100,082	27,351	140,340	67,863	33,782	6,383	68,960	3,612	180,600	128.7	—40,270	—53,560	—58,125	—22,282
	9 mos.	233	1,507,804	284,111	1,908,115	496,564	403,847	52,321	860,371	33,880	1,846,983	96.8	61,132	—58,568	—195,621	—100,759
Canadian Pacific Lines in Vermont	Sept.	85	90,893	43,195	159,713	20,563	27,574	2,554	96,689	3,458	150,838	99.4	8,875	4,125	3,676	—24,967
	9 mos.	85	991,301	337,311	1,543,421	233,569	277,557	20,697	906,022	24,794	1,462,639	94.8	80,782	38,032	33,991	—69,602
Central of Georgia	Sept.	1,911	2,036,235	349,575	2,595,741	301,944	406,753	70,585	806,665	90,954	1,682,571	64.8	913,170	732,356	748,386	716,584
	9 mos.	1,911	15,848,750	3,442,856	21,123,024	2,650,252	3,738,859	675,313	7,802,229	910,971	15,869,304	75.1	5,253,720	4,074,936	3,956,633	4,330,543
Central New Jersey	Sept.	690	3,968,962	890,862	5,222,147	443,636	1,058,401	49,653	1,862,804	113,908	3,557,601	68.1	1,664,546	1,206,091	1,094,173	1,164,366
	9 mos.	690	34,516,808	7,069,873	44,431,959	4,189,154	9,549,768	430,200	17,279,405	1,059,154	32,734,364	73.7	11,697,595	8,913,326	7,954,929	7,922,022
Central Vermont	Sept.	433	616,088	120,747	808,266	112,647	96,788	20,504	313,655	24,852	570,376	70.6	237,890	218,334	198,151	167,576
	9 mos.	433	5,147,494	1,042,750	6,836,905	1,274,420	973,778	179,969	2,854,541	219,124	5,512,048	80.6	1,324,857	1,149,816	971,753	743,627
Chesapeake & Ohio	Sept.	2,707	10,969,557	753,066	12,146,068	1,613,878	2,394,330	133,159	3,075,683	267,916	7,513,695	61.9	4,632,373	3,831,339	3,970,431	3,650,011
	9 mos.	2,702	92,221,319	6,642,616	102,845,772	14,851,571	22,853,433	1,168,700	26,938,538	2,521,209	68,607,490	66.7	34,238,282	27,625,440	28,951,197	26,639,407
Chicago & Alton	Sept.	1,029	1,695,837	536,704	2,497,169	394,773	530,384	77,616	891,190	53,059	1,950,531	78.1	546,638	441,239	274,233	371,030
	9 mos.	1,040	14,381,038	4,776,781	21,130,625	2,798,817	4,497,717	704,561	8,025,650	557,882	16,657,396	78.8	4,473,229	3,520,668	1,890,381	2,497,539
Chicago & Eastern Illinois	Sept.	945	1,709,827	345,370	2,232,201	298,656	492,745	85,624	844,460	67,059	1,792,526	80.3	439,675	323,774	224,387	476,229
	9 mos.	945	15,370,618	3,183,541	20,106,730	2,472,196	4,532,969	750,806	7,845,475	628,649	16,299,970	81.1	3,806,760	2,765,865	1,559,636	1,446,232
Chicago & Illinois Midland	Sept.	133	64,147	4,844	74,022	34,029	153,923	12,858	41,938	13,786	256,530	346.6	—182,508	—187,180	—200,825	25,208
	9 mos.	133	1,003,282	76,122	1,121,470	332,311	607,372	81,256	463,958	116,921	1,601,814	142.8	—480,344	—537,563	—620,378	339,605
Chicago & North Western	Sept.	8,463	11,163,533	2,156,574	14,838,998	2,016,637	2,565,596	205,694	5,226,914	349,137	10,413,566	70.2	4,425,432	3,531,019	3,119,013	3,095,087
	9 mos.	8,463	81,656,687	19,336,227	113,028,590	15,950,089	22,175,936	1,921,987	43,054,833	3,157,257	86,732,379	76.7	26,296,211	18,891,393	16,585,987	18,052,168

Revenues and Expenses of Railways

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1927--CONTINUED

Name of road		Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Maintenance of: Way and structures.	Equipment.	Operating expenses: Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net ry. operating income.	Net ry. operating income, 1926.
Chicago, Burlington & Quincy	Sept.	9,391	$10,956,265	$2,050,462	$14,342,623	$1,936,806	$1,847,504	$245,930	$4,498,068	$376,097	$8,980,448	62.6	$5,362,175	$4,205,030	$3,731,584	$3,556,703
	9 mos.	9,391	84,801,072	16,963,847	113,327,357	16,393,239	18,328,329	2,424,955	39,136,930	3,310,455	80,226,686	70.8	33,100,671	24,198,476	21,021,031	21,262,670
Chicago Great Western	Sept.	1,496	1,788,922	293,168	2,264,084	309,469	383,699	77,759	847,138	53,252	1,682,203	74.3	581,881	489,142	347,699	372,130
	9 mos.	1,496	14,230,598	2,461,458	18,134,876	2,560,276	3,510,747	707,384	7,318,768	508,103	14,706,682	81.1	3,428,194	2,661,418	1,408,999	1,831,550
Chicago, Indianapolis & Louisville	Sept.	650	1,413,602	226,821	1,809,957	175,207	309,775	37,035	600,914	36,274	1,173,997	64.9	635,960	529,841	390,436	324,616
	9 mos.	650	10,881,870	1,929,552	14,196,191	1,368,445	2,874,089	351,170	5,115,325	323,457	10,142,621	71.4	4,053,570	3,314,948	2,360,149	2,183,072
Chicago, Milwaukee & St. Paul	Sept.	11,205	13,572,268	1,795,373	16,816,665	2,782,480	2,716,047	375,142	5,384,837	365,594	11,712,348	69.6	5,104,317	4,398,156	3,524,255	3,242,745
	9 mos.	11,204	93,312,830	14,475,642	119,462,155	21,360,270	26,578,857	2,890,344	44,590,556	3,434,863	99,504,885	83.3	19,957,270	13,222,019	8,475,881	12,502,717
Chicago River & Indiana	Sept.	19	.....	.....	602,042	61,249	78,850	852	210,318	13,506	364,775	60.6	237,267	189,802	293,493	315,292
	9 mos.	19	.....	.....	5,091,245	531,424	697,936	7,560	1,941,752	140,486	3,319,158	65.2	1,772,087	1,394,673	2,403,873	2,378,714
Chicago, Rock Island & Pacific	Sept.	7,575	8,863,957	1,929,602	11,795,255	1,394,975	2,079,264	242,051	3,972,680	292,898	7,898,871	67.0	3,896,384	3,264,112	2,831,118	2,545,650
	9 mos.	7,567	74,850,231	16,667,067	99,930,097	13,456,362	20,629,561	2,069,162	36,552,476	2,814,917	75,296,790	75.3	24,633,307	18,911,115	14,899,299	14,123,572
Chicago, Rock Island & Gulf	Sept.	507	384,179	69,054	488,600	113,062	55,178	18,648	179,891	18,844	382,422	78.3	106,178	86,770	70,008	182,504
	9 mos.	473	4,271,548	714,776	5,384,404	963,721	692,724	182,000	1,939,128	158,344	3,872,651	71.9	1,511,753	1,279,861	1,004,571	1,311,607
Chic., St. Paul, Minn. & Omaha	Sept.	1,746	2,303,264	406,333	2,901,652	450,579	448,544	33,913	933,373	75,728	1,954,769	67.4	946,883	798,239	692,743	434,189
	9 mos.	1,746	14,735,892	3,588,236	19,857,180	3,241,857	3,640,376	313,596	8,156,845	684,678	16,114,108	81.2	3,743,072	2,743,325	1,996,390	2,033,917
Churchfield Railroad	Sept.	309	632,846	21,833	666,686	86,712	154,226	22,528	124,960	18,469	407,341	61.1	259,345	184,245	328,065	367,353
	9 mos.	309	5,696,479	220,963	6,032,420	730,253	1,533,893	206,534	1,248,711	173,611	3,891,370	64.5	2,141,050	1,465,905	2,561,325	2,663,583
Colorado & Southern	Sept.	1,054	1,058,409	142,189	1,294,124	154,156	193,943	14,029	371,317	43,016	786,456	60.8	507,668	442,522	421,363	233,927
	9 mos.	1,054	7,562,614	1,088,328	9,470,660	1,944,194	2,181,112	136,987	3,272,221	395,792	8,004,412	84.5	1,466,248	885,154	789,062	1,074,617
Ft. Worth & Denver City	Sept.	491	732,518	201,576	1,019,253	125,836	141,470	17,359	285,685	38,723	588,044	57.7	431,209	400,252	370,594	446,793
	9 mos.	491	6,623,154	1,887,900	9,202,008	1,793,508	1,539,817	173,979	2,735,096	355,579	6,541,563	71.1	2,660,445	2,182,698	2,046,001	2,916,267
Wichita Valley	Sept.	271	111,074	17,595	138,477	25,485	9,041	22	50,570	2,207	87,320	63.1	51,157	43,250	28,683	29,668
	9 mos.	271	1,041,083	146,180	1,257,937	266,410	84,820	316	397,216	18,238	765,832	60.9	492,105	413,358	243,888	216,354
Columbus & Greenville	Sept.	167	155,131	22,556	187,515	35,049	16,147	3,622	57,196	10,106	121,880	65.0	65,635	64,365	46,179	39,383
	9 mos.	167	1,083,814	186,815	1,328,481	404,584	165,191	31,761	464,789	104,806	1,170,806	88.1	157,675	147,269	—3,393	89,725
Conemaugh & Black Lick	Sept.	23	89,595	.....	143,217	21,967	26,063	942	75,355	3,955	128,282	89.6	14,935	13,735	16,711	10,364
	9 mos.	23	739,986	.....	1,287,292	183,879	284,224	9,526	771,203	28,242	1,277,074	99.2	10,218	—582	5,785	40,016
Delaware & Hudson	Sept.	881	3,185,496	408,191	3,825,512	509,438	900,417	62,900	1,033,912	166,743	2,690,406	70.3	1,135,106	1,018,085	1,049,112	1,271,157
	9 mos.	881	27,254,926	2,821,146	32,227,821	4,147,134	8,564,141	481,170	11,259,044	1,294,030	25,913,445	80.4	6,314,376	5,260,878	5,116,343	7,839,004
Delaware, Lackawanna & Western	Sept.	999	5,221,580	1,214,289	7,341,020	783,172	1,204,035	147,655	2,665,101	171,696	5,024,005	68.4	2,317,015	1,651,797	1,711,491	1,995,506
	9 mos.	999	46,017,535	9,897,611	63,421,776	6,415,743	11,035,640	1,228,006	24,703,507	1,602,243	45,442,196	71.7	17,979,580	12,402,931	12,620,716	13,976,647
Denver & Rio Grande Western	Sept.	2,560	2,520,650	414,168	3,193,857	618,915	474,548	55,967	956,036	85,209	2,243,624	70.2	950,233	750,057	804,095	1,006,046
	9 mos.	2,550	18,435,139	3,274,634	23,609,869	5,111,966	4,484,866	513,624	7,125,003	790,617	18,367,604	77.8	5,242,265	3,540,046	4,192,682	5,569,004
Denver & Salt Lake	Sept.	255	425,018	20,593	485,590	99,131	85,974	2,284	96,981	8,898	290,396	59.8	195,194	188,940	186,505	119,824
	9 mos.	255	2,492,143	233,568	2,932,864	911,978	931,904	16,710	649,619	78,179	2,578,171	87.9	354,693	288,739	334,720	150,666
Detroit & Mackinac	Sept.	315	126,825	12,35	154,647	42,507	21,324	1,936	45,864	5,259	109,149	70.6	45,498	35,534	40,293	30,945
	9 mos.	368	1,020,687	133,211	1,264,369	253,951	233,778	17,833	420,060	48,988	945,744	74.8	318,625	226,655	261,584	97,608
Detroit & Toledo Shore Line	Sept.	50	379,311	.....	384,073	68,722	33,450	3,346	88,669	8,508	202,695	52.8	181,378	151,807	74,861	99,524
	9 mos.	50	3,644,527	.....	3,687,972	532,619	297,669	31,446	883,112	63,309	1,808,155	49.0	1,879,817	1,610,044	825,535	766,475
Detroit Terminal	Sept.	19	.....	.....	164,913	18,258	15,487	.....	76,015	3,869	113,629	68.9	51,284	37,767	39,692	47,223
	9 mos.	19	.....	.....	1,601,930	164,715	138,032	49	741,883	36,575	1,081,254	67.5	520,676	377,038	422,748	355,370
Detroit, Toledo & Ironton	Sept.	495	696,518	6,386	718,505	156,523	134,450	12,857	248,421	34,296	578,850	80.6	139,655	105,178	45,386	185,438
	9 mos.	495	6,622,494	51,017	6,805,034	1,180,346	1,351,912	122,836	2,319,099	367,560	5,286,520	77.7	1,518,514	1,191,005	628,506	1,852,400
Duluth & Iron Range	Sept.	274	821,350	5,112	935,403	127,672	105,220	1,403	202,643	17,896	454,673	48.6	480,730	426,060	431,705	591,565
	9 mos.	274	4,968,376	55,364	5,703,025	965,861	1,001,766	17,421	1,477,156	191,287	3,654,202	64.1	2,048,823	1,561,948	1,582,915	1,837,794
Duluth, Missabe & Northern	Sept.	306	1,808,233	6,101	2,072,312	160,164	194,016	2,994	339,806	22,473	719,453	34.7	1,352,859	1,180,643	1,183,527	1,985,739
	9 mos.	306	12,076,120	53,789	13,773,091	1,675,069	1,869,798	28,751	2,481,497	213,770	6,268,518	45.5	7,504,573	5,884,305	5,850,978	6,997,695
Duluth, Winnipeg & Pacific	Sept.	178	184,384	23,503	226,076	49,627	56,432	4,945	78,115	8,101	200,763	88.8	25,313	14,007	17,912	12,987
	9 mos.	178	1,670,677	166,689	1,916,105	380,454	439,918	42,379	628,092	73,242	1,582,187	82.6	333,918	238,817	266,282	180,178
Elgin, Joliet & Eastern	Sept.	461	1,795,512	20	1,946,055	228,976	434,095	14,648	682,424	46,162	1,403,651	72.1	542,404	411,140	276,576	500,385
	9 mos.	460	17,315,861	80	18,870,105	1,922,559	3,790,947	123,485	6,495,314	457,018	12,769,847	67.7	6,100,258	5,143,703	3,826,651	4,585,462
Erie Railroad	Sept.	2,047	8,078,628	1,026,589	9,947,843	1,211,078	2,042,982	159,838	3,671,672	290,109	7,417,875	74.6	2,529,968	2,168,600	2,119,841	2,599,972
	9 mos.	2,047	66,146,837	9,005,304	81,966,153	9,990,557	20,500,225	1,361,637	32,549,838	2,654,418	67,433,435	82.3	14,532,718	11,210,179	11,100,180	11,408,008
Chicago & Erie	Sept.	269	990,168	53,956	1,140,920	137,022	102,140	25,297	387,510	40,775	692,682	60.7	448,238	393,579	48,981	282,976
	9 mos.	269	8,738,255	480,156	10,084,309	1,260,776	1,187,788	218,352	3,352,870	376,374	6,394,444	63.4	3,689,865	3,196,638	180,524	966,602
New Jersey & New York	Sept.	45	31,045	102,588	139,152	18,973	23,097	1,420	75,370	3,644	122,468	88.0	16,684	13,055	—21,302	—16,181
	9 mos.	45	267,849	882,985	1,197,845	160,371	194,827	14,522	671,269	36,945	1,077,796	90.0	120,049	87,628	—209,508	—142,743
N. Y., Susquehanna & Western	Sept.	134	351,845	50,353	445,117	53,754	59,858	4,628	206,890	9,846	334,949	75.2	110,168	81,084	68,689	31,440
	9 mos.	134	2,895,633	452,190	3,724,202	438,771	571,829	44,722	1,868,376	107,884	3,031,412	81.4	692,790	435,469	217,301	353,468

Revenues and Expenses of Railways

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1927—CONTINUED

Name of road		Average mileage operated during period.	Operating revenues			Operating expenses						Operating ratio.	Net from railway operation.	Operating income (or loss).	Net ry. operating income.	Net ry. operating income, 1926.
			Freight.	Passenger.	Total (inc. misc.)	Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.					
Evansville, Indianap. & Terre Haute	Sept.	146	$258,275	$4,796	$296,793	$30,492	$34,568	$1,885	$131,196	$5,920	$204,061	75.6	$65,732	$62,178	$3,166	$35,724
	9 mos.	146	1,899,345	46,813	2,005,463	251,709	242,799	19,988	707,228	64,418	1,301,577	64.9	703,886	634,428	242,237	239,958
Florida East Coast	Sept.	857	546,631	227,648	891,494	286,543	205,987	27,092	394,399	46,880	973,880	109.2	—82,386	—210,307	—250,484	302,162
	9 mos.	849	8,732,868	4,143,603	14,426,222	2,986,212	2,315,543	286,432	5,129,569	476,014	11,337,218	78.6	3,089,004	1,947,910	841,740	4,134,827
Fort Smith & Western	Sept.	249	120,439	12,444	140,301	31,870	31,055	5,273	45,373	7,556	120,377	85.8	19,924	14,329	6,508	25,662
	9 mos.	249	1,038,370	110,263	1,212,732	261,660	266,053	49,435	433,940	68,694	1,073,700	88.5	139,032	91,821	—11,008	14,783
Galveston Wharf	Sept.	13	.....	.....	161,848	58,177	4,269	1,719	33,731	4,054	114,399	70.7	47,449	20,949	20,957	71,640
	9 mos.	13	.....	.....	1,481,261	457,732	42,579	17,436	301,979	33,327	985,944	66.6	495,317	313,817	313,671	267,755
Georgia R. R.	Sept.	328	421,635	74,329	525,277	38,085	83,398	24,467	213,408	24,779	384,419	73.2	140,858	133,219	151,734	145,342
	9 mos.	328	3,363,553	650,170	4,291,320	446,458	789,783	213,937	1,839,595	211,384	3,499,623	81.6	791,697	687,924	807,225	828,506
Georgia & Florida	Sept.	445	150,046	18,131	176,540	34,066	25,345	10,575	57,178	7,816	135,110	76.5	41,430	33,726	31,669	26,888
	9 mos.	445	1,246,131	147,088	1,463,656	260,020	205,861	90,822	523,306	73,621	1,155,545	78.9	308,111	238,077	211,112	183,966
Grand Trunk Western	Sept.	347	1,577,955	203,643	1,879,777	228,973	362,523	44,142	583,444	60,835	1,285,504	68.4	594,273	509,947	424,964	315,437
	9 mos.	347	13,461,383	1,743,620	15,979,139	1,875,352	3,327,373	380,517	5,305,694	565,147	11,471,968	71.8	4,507,171	3,746,875	2,739,086	2,237,496
Atlantic & St. Lawrence	Sept.	166	122,490	29,572	172,490	40,619	31,893	6,611	83,600	8,097	173,435	100.5	—945	—13,445	—58,258	—41,408
	9 mos.	166	1,475,587	279,817	1,940,975	377,391	334,862	57,059	938,800	76,454	1,797,897	92.6	143,078	27,888	—525,512	—453,795
Chic., Det. & Canada Gr. Tr. Jct.	Sept.	59	304,604	1,674	333,894	37,306	17,840	4,905	96,618	4,190	160,293	48.0	173,601	163,196	126,589	100,843
	9 mos.	59	2,589,334	10,694	2,943,041	361,692	155,238	41,160	906,627	39,665	1,503,168	51.1	1,439,873	1,346,417	1,047,594	944,157
Detroit, Grand Haven & Mil.	Sept.	189	657,619	28,449	744,075	120,885	65,658	13,866	275,183	18,829	491,928	66.1	252,147	239,193	117,473	219,872
	9 mos.	189	5,594,810	267,824	6,315,168	811,268	543,016	117,862	2,363,461	167,032	3,994,255	63.2	2,320,913	2,202,417	1,239,857	1,273,155
Great Northern	Sept.	8,164	11,104,350	1,168,117	13,351,222	1,399,654	1,490,641	186,380	3,595,302	215,878	6,961,953	52.1	6,389,269	5,374,135	4,949,544	5,006,648
	9 mos.	8,164	64,276,153	9,571,781	81,928,588	11,696,305	13,390,584	1,940,554	26,910,567	1,994,208	56,536,057	69.0	25,392,531	17,914,475	17,407,246	18,764,154
Green Bay & Western	Sept.	234	118,869	4,356	130,530	33,479	21,725	4,974	44,368	2,492	107,038	82.0	23,492	15,492	12,160	13,006
	9 mos.	234	1,046,765	55,576	1,159,139	241,119	186,910	39,736	443,667	24,738	935,886	80.7	223,253	151,252	125,985	179,954
Gulf & Ship Island	Sept.	307	318,558	36,953	379,165	97,383	55,206	5,317	128,999	7,947	297,695	78.5	81,470	59,243	39,860	—35,043
	9 mos.	307	2,332,249	365,194	2,906,983	1,061,965	517,523	50,757	1,124,038	74,502	2,860,161	98.4	46,822	—166,530	—288,004	—841,105
Gulf, Mobile & Northern	Sept.	733	590,813	37,106	651,011	105,381	92,881	31,963	191,346	27,859	449,619	69.06	201,392	157,007	136,486	158,111
	9 mos.	680	4,831,106	300,168	5,340,184	997,850	845,924	272,018	1,586,164	252,006	3,956,070	74.08	1,384,114	1,047,805	833,879	1,133,306
Hocking Valley	Sept.	348	1,712,820	70,324	1,992,660	243,164	374,697	16,057	509,728	43,438	1,187,084	59.6	805,576	652,273	495,768	376,193
	9 mos.	348	14,133,797	602,641	16,296,891	1,791,647	3,358,386	148,735	4,473,830	398,275	10,170,582	62.4	6,126,309	5,028,244	4,186,795	3,279,175
Illinois Central	Sept.	4,914	10,970,793	1,924,516	13,774,603	1,678,452	3,193,181	235,713	4,508,253	357,505	10,047,803	72.9	3,726,800	2,784,641	2,602,846	2,256,613
	9 mos.	4,901	91,440,932	17,470,636	117,237,200	13,737,124	27,342,688	2,327,431	41,268,321	3,142,245	88,483,816	75.5	28,753,384	20,994,786	19,937,781	18,972,363
Yazoo & Mississippi Valley	Sept.	1,710	2,011,224	336,271	2,507,365	634,938	475,127	46,109	866,363	72,560	2,102,868	83.9	404,497	234,847	138,995	676,027
	9 mos.	1,710	15,345,787	2,816,865	19,389,288	4,559,498	3,640,362	435,385	7,272,859	659,821	16,615,515	85.7	2,773,773	1,171,097	639,390	2,305,043
Illinois Central System	Sept.	6,625	12,994,190	2,265,765	16,299,119	2,313,390	3,673,169	281,822	5,385,574	430,102	12,166,527	74.6	4,132,592	3,015,864	2,751,253	2,936,927
	9 mos.	6,611	106,872,077	20,325,336	136,749,796	18,296,622	31,039,737	2,762,816	48,628,298	3,802,571	105,243,641	77.0	31,506,155	22,101,235	20,625,201	21,340,936
Kansas City, Mexico & Orient	Sept.	272	214,145	5,803	229,117	95,990	29,760	8,642	73,924	8,333	216,070	94.3	13,047	9,006	27,905	10,296
	9 mos.	272	2,113,307	61,409	2,251,347	612,882	475,588	77,224	931,114	94,578	2,190,494	97.3	60,853	23,209	111,325	40,968
Kans. City, Mex. & Orient of Tex.	Sept.	465	560,417	17,767	598,038	244,253	70,683	9,523	143,195	11,272	478,904	80.1	119,134	111,941	37,963	8,433
	9 mos.	465	4,782,656	165,588	5,093,807	1,381,916	721,316	86,917	1,642,212	110,596	3,940,797	77.4	1,153,010	1,088,745	309,610	59,609
Kansas City Southern	Sept.	784	1,446,636	121,974	1,731,848	196,511	258,452	53,259	480,079	87,980	1,074,763	62.1	657,085	543,857	476,201	413,328
	9 mos.	784	11,905,197	1,006,661	14,345,504	1,592,817	2,372,470	468,135	4,427,867	759,695	9,605,588	67.0	4,739,916	3,741,537	3,233,113	3,229,653
Texarkana & Ft. Smith	Sept.	81	228,475	10,122	263,043	33,127	38,232	6,528	74,741	10,238	165,213	62.8	97,830	82,533	30,527	57,487
	9 mos.	81	2,003,451	87,756	2,260,105	338,312	240,630	58,318	652,656	94,322	1,396,163	61.8	863,942	728,746	418,263	625,423
Kansas, Oklahoma & Gulf	Sept.	326	264,023	4,134	275,958	72,819	21,325	11,173	69,079	8,495	179,033	64.9	96,925	89,014	73,157	16,568
	9 mos.	326	2,008,592	41,896	2,100,689	786,606	184,764	86,517	612,293	68,502	1,706,701	81.2	393,988	308,204	162,388	—423,833
Lake Superior & Ishpeming	Sept.	160	296,434	1,261	345,991	45,857	24,612	619	63,875	4,424	139,211	40.2	206,780	169,091	168,078	146,044
	9 mos.	160	1,570,232	22,464	1,823,116	313,993	234,283	5,105	427,994	44,980	1,026,156	56.3	796,960	585,661	562,393	581,096
Lake Terminal	Sept.	13	.....	.....	97,084	19,924	23,950	.....	55,973	1,921	101,768	104.8	—4,684	—8,184	—7,374	5,516
	9 mos.	13	.....	.....	823,439	140,464	194,908	.....	501,838	16,738	853,948	103.7	—30,509	—66,742	—69,804	39,956
Lehigh & Hudson River	Sept.	96	271,278	2,075	284,078	46,683	41,462	2,453	91,239	10,431	192,268	67.7	91,810	74,708	49,404	70,660
	9 mos.	96	2,395,572	18,324	2,527,160	313,548	391,144	19,425	877,330	88,004	1,689,395	66.8	837,765	684,732	469,870	512,446
Lehigh & New England	Sept.	216	491,760	1,068	502,185	73,081	116,094	5,271	163,508	15,702	372,256	74.1	129,929	111,055	104,093	220,149
	9 mos.	216	4,335,683	10,640	4,472,316	478,941	984,738	50,103	1,428,779	149,017	3,082,049	69.7	1,340,267	1,147,060	1,080,888	1,234,290
Lehigh Valley	Sept.	1,363	5,492,807	738,345	6,690,730	781,276	1,447,455	135,436	2,506,509	140,414	5,048,628	75.5	1,642,102	1,272,067	1,163,273	1,463,784
	9 mos.	1,363	46,044,273	5,926,585	56,302,016	6,474,108	12,621,974	1,219,737	22,728,069	1,324,766	44,683,849	79.4	11,618,167	9,053,079	7,608,444	10,459,146
Louisiana & Arkansas	Sept.	302	274,671	12,302	295,669	45,408	55,610	11,913	86,989	11,225	210,743	71.3	84,926	57,119	44,527	86,949
	9 mos.	302	2,429,652	133,822	2,669,702	509,700	552,724	100,861	813,765	103,836	2,078,726	77.8	590,976	359,140	261,620	609,139
Louisiana Ry. & Nav. Co.	Sept.	337	277,572	13,159	307,037	62,554	26,951	10,881	108,239	9,785	211,959	69.0	95,078	73,046	44,923	62,929
	9 mos.	337	2,109,806	114,059	2,368,728	553,523	306,905	111,507	1,024,781	89,355	2,065,136	87.2	303,592	101,979	—152,014	—33,681

Revenues and Expenses of Railways

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1927—CONTINUED

Name of road		Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Maintenance of: Way and structures.	Equipment.	Operating expenses: Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net ry. operating income.	Net ry. operating income, 1926.
Louisiana Ry. & Nav. Co. of Tex.	Sept.	206	$106,545	$5,001	$116,005	$24,042	$11,987	$3,168	$43,554	$5,844	$88,595	66.4	$27,410	$23,345	$6,577	$9,665
	9 mos.	206	719,779	40,235	793,628	196,787	117,657	29,084	357,809	55,134	756,214	95.3	37,414	1,156	—119,909	—96,886
Louisville & Nashville	Sept.	5,064	10,454,693	1,653,528	12,809,020	1,833,466	2,570,782	240,360	4,212,530	330,429	9,226,143	72.0	3,582,877	2,777,060	2,895,034	2,426,657
	9 mos.	5,062	88,30.,377	15,294,702	109,638,835	16,738,380	24,708,554	2,305,916	38,006,106	3,032,846	85,151,707	77.7	24,487,128	18,861,277	18,747,480	20,783,277
Louisville, Henderson & St. Louis	Sept.	199	386,414	48,281	456,408	70,298	73,575	10,782	139,186	12,126	306,793	67.2	149,615	123,378	102,863	72,849
	9 mos.	199	2,504,638	459,066	3,124,996	553,466	470,692	76,947	1,006,090	108,449	2,218,795	71.0	906,201	714,434	636,967	432,558
Maine Central	Sept.	1,121	1,133,244	324,819	1,635,259	243,079	307,834	14,716	658,213	51,489	1,279,309	78.2	355,950	242,036	237,318	339,963
	9 mos.	1,121	10,956,315	2,878,119	15,271,143	2,477,380	2,867,317	141,815	6,094,778	503,438	12,102,439	79.3	3,168,704	2,142,808	1,897,507	2,189,242
Midland Valley	Sept.	364	345,408	22,567	379,202	59,361	30,360	7,780	79,874	14,939	191,812	50.6	187,390	169,594	141,412	117,697
	9 mos.	364	2,613,020	247,818	2,965,165	508,431	331,246	66,714	763,535	142,034	1,809,117	61.0	1,156,048	983,024	799,154	986,425
Minneapolis & St. Louis	Sept.	1,627	1,398,747	80,866	1,549,741	198,349	240,597	36,698	556,760	42,686	1,073,769	69.3	475,972	412,798	316,795	165,756
	9 mos.	1,627	9,190,208	798,312	10,553,474	1,797,948	2,373,304	318,686	4,797,401	409,721	9,687,309	91.8	866,165	355,396	—137,402	—44,098
Minneapolis, St. Paul & S. S. Marie	Sept.	4,396	4,758,771	504,572	5,683,516	583,192	739,645	81,265	1,733,361	112,433	3,276,094	57.6	2,407,422	2,072,632	1,862,099	1,182,037
	9 mos.	4,396	28,072,307	4,359,894	35,293,622	4,993,629	6,545,972	680,069	13,058,032	1,019,796	26,496,818	75.1	8,796,804	6,607,757	5,499,035	4,683,556
Duluth, South Shore & Atlantic	Sept.	589	343,979	67,853	454,801	76,928	65,653	8,120	166,068	10,152	331,811	73.0	122,990	90,989	77,852	72,802
	9 mos.	589	3,060,818	602,318	4,032,752	703,862	624,053	69,441	1,623,598	102,400	3,163,088	78.4	869,664	593,648	458,724	243,720
Spokane International	Sept.	165	92,830	11,046	112,489	23,197	8,983	3,914	32,624	6,473	77,247	68.7	35,242	29,883	19,994	14,162
	9 mos.	165	786,748	95,476	943,462	162,261	75,252	33,228	290,589	58,619	630,726	66.9	312,736	264,380	192,392	220,945
Mississippi Central	Sept.	161	143,646	10,358	158,363	24,856	28,456	8,935	37,226	7,301	106,772	67.4	51,591	39,539	45,366	45,748
	9 mos.	161	1,116,506	83,077	1,241,805	193,929	237,644	76,965	330,414	70,462	909,376	73.2	332,429	252,020	282,603	308,255
Missouri & North Arkansas	Sept.	364	117,987	13,799	142,274	40,086	14,473	9,589	55,667	8,392	128,207	90.1	14,067	11,408	850	—3,474
	9 mos.	364	1,057,274	134,320	1,276,733	354,533	145,975	88,079	481,846	69,605	1,139,712	89.2	137,021	115,008	20,141	—147,395
Missouri-Kansas-Texas	Sept.	1,799	2,552,556	306,878	3,126,368	461,260	607,814	60,551	719,722	96,170	1,942,302	62.1	1,184,066	946,478	853,045	716,331
	9 mos.	1,799	21,353,253	3,052,801	26,302,707	3,621,265	5,598,692	587,738	6,736,238	868,556	17,467,241	66.4	8,835,466	7,010,871	6,956,837	6,846,149
Missouri-Kansas-Texas of Texas	Sept.	1,389	1,375,836	315,553	1,855,700	277,543	240,738	46,781	659,122	64,242	1,286,291	69.3	569,409	507,060	359,565	501,352
	9 mos.	1,389	11,271,175	2,889,878	15,426,536	2,319,577	2,213,625	453,789	6,146,521	592,291	11,823,857	76.6	3,602,679	3,102,493	1,617,664	1,882,837
Missouri Pacific	Sept.	7,358	9,021,324	1,229,532	11,150,366	1,867,137	1,931,097	266,090	3,808,652	360,291	8,126,079	72.9	3,024,287	2,612,971	2,249,966	2,231,158
	9 mos.	7,354	74,076,874	11,108,667	92,713,242	15,546,164	18,050,582	2,566,690	34,354,566	3,203,016	73,782,142	79.6	18,931,100	15,167,040	11,815,974	14,565,127
Gulf Coast Lines	Sept.	1,004	989,254	148,519	1,196,205	275,394	216,378	38,142	365,885	53,081	943,526	78.88	252,679	192,827	200,282	415,959
	9 mos.	989	9,690,550	1,437,880	11,809,895	2,304,521	2,044,835	358,693	3,743,319	504,799	8,947,815	75.79	2,862,080	2,301,491	1,713,049	2,873,010
International-Great Northern	Sept.	1,159	1,447,657	203,978	1,781,430	274,072	299,805	31,986	596,180	63,086	1,266,003	71.07	515,427	473,638	423,838	378,750
	9 mos.	1,159	10,429,292	1,800,221	13,440,772	2,377,688	2,405,792	330,718	5,481,447	566,641	11,020,286	81.99	2,420,486	2,040,333	1,474,059	1,627,774
San Antonio, Uvalde & Gulf	Sept.	318	112,895	18,184	147,037	28,201	22,473	5,206	59,003	5,962	116,742	79.4	30,295	26,616	4,114	17,978
	9 mos.	318	1,194,282	184,928	1,497,517	303,005	199,780	46,512	497,363	56,436	1,102,898	73.6	394,619	361,899	121,449	227,110
Texas & Pacific	Sept.	2,015	2,571,637	468,740	3,284,455	586,207	576,275	73,225	980,920	104,712	2,313,573	70.4	970,882	814,165	717,856	740,680
	9 mos.	1,969	21,634,591	4,124,708	27,589,394	4,941,777	5,064,812	655,564	9,556,379	901,953	21,161,528	76.7	6,427,866	5,020,270	3,717,323	3,856,791
Mobile & Ohio	Sept.	1,161	1,469,549	117,453	1,669,494	232,724	277,682	51,699	544,780	44,529	1,152,128	69.0	517,366	409,922	366,865	358,541
	9 mos.	1,161	11,847,398	978,870	13,571,395	2,022,784	2,466,338	483,469	4,933,875	420,350	10,325,604	76.1	3,245,791	2,460,334	2,119,625	2,545,114
Monongahela	Sept.	169	685,717	19,763	713,435	85,000	85,000	1,117	165,944	9,666	345,724	48.5	367,711	332,044	223,803	214,450
	9 mos.	169	5,645,352	219,370	5,922,511	715,000	645,000	9,372	1,492,555	90,773	2,945,458	49.7	2,977,053	2,703,980	1,792,082	1,614,995
Monongahela Connecting	Sept.	7	.....	.....	144,042	16,392	31,575	375	65,849	2,842	117,033	81.2	27,009	20,032	17,836	43,341
	9 mos.	7	.....	.....	1,518,488	164,153	290,724	3,392	660,881	28,987	1,148,137	75.6	370,351	289,683	269,726	347,930
Montour	Sept.	57	105,873	106	106,882	29,767	40,282	1,228	20,923	9,092	101,292	95.3	5,590	472	33,089	37,845
	9 mos.	57	962,076	2,188	969,605	236,531	394,456	10,875	210,885	75,183	927,930	95.7	41,675	—5,778	285,895	203,831
Nashville, Chattanooga & St. Louis	Sept.	1,259	1,512,905	308,237	1,959,104	275,254	387,143	76,486	653,790	71,847	1,469,941	75.0	489,163	399,125	424,124	336,566
	9 mos.	1,259	12,822,168	2,952,810	17,239,967	2,420,301	3,508,440	753,695	6,214,468	704,247	13,647,221	79.2	3,592,746	2,888,768	3,014,530	2,844,962
Nevada Northern	Sept.	165	69,861	5,406	83,244	11,791	3,944	956	15,789	4,866	37,492	45.0	45,752	39,874	39,768	34,511
	9 mos.	165	603,085	52,910	722,496	113,966	44,639	8,382	139,510	42,408	350,711	48.5	371,785	296,307	302,094	268,407
Newburgh & South Shore	Sept.	7	.....	.....	155,293	15,488	33,304	.....	62,398	4,056	115,266	74.2	40,027	27,141	29,087	41,244
	9 mos.	7	.....	.....	1,346,089	185,357	322,454	.....	559,062	39,327	1,106,200	82.2	239,889	127,830	160,682	250,156
New Orleans Great Northern	Sept.	276	287,727	24,737	321,612	41,249	61,815	13,109	85,882	12,030	214,308	66.6	107,304	86,182	70,073	49,482
	9 mos.	275	2,157,950	227,146	2,472,933	396,427	463,383	83,200	683,189	97,116	1,718,742	69.5	754,191	601,618	439,520	442,856
New York Central	Sept.	6,925	20,209,358	9,115,993	33,878,675	5,125,057	6,790,804	446,190	11,128,631	1,232,972	25,223,399	74.5	8,655,276	6,418,170	6,343,492	7,801,870
	9 mos.	6,925	180,012,182	75,596,615	292,619,022	40,708,518	59,939,724	3,801,829	101,125,157	10,769,667	220,447,533	75.3	72,171,489	52,380,762	49,773,530	55,301,485
Cincinnati Northern	Sept.	244	423,741	5,952	440,996	52,298	69,757	5,661	124,329	14,969	266,892	60.5	174,104	138,960	108,326	144,585
	9 mos.	244	3,385,888	54,666	3,520,136	437,226	684,067	56,964	1,123,411	101,441	2,403,717	68.3	1,116,419	884,282	626,476	741,743
Cleve., Cinn., Chicago & St. L.	Sept.	2,397	6,117,136	1,399,284	8,255,216	1,016,560	1,625,431	129,343	2,846,129	275,601	5,975,017	72.4	2,280,199	1,781,655	1,729,044	1,999,129
	9 mos.	2,397	51,811,215	11,877,274	69,455,577	8,262,883	14,766,892	1,313,399	25,544,081	2,472,941	53,045,796	76.4	16,409,781	12,587,915	11,674,695	13,416,154
Indiana Harbor Belt	Sept.	117	.....	.....	945,924	126,141	117,241	4,894	360,549	24,911	633,736	67.0	312,188	261,490	185,833	218,759
	9 mos.	117	.....	.....	8,470,338	1,262,958	1,245,895	43,730	3,509,258	237,761	6,297,814	74.4	2,172,524	1,759,772	1,365,999	1,550,921

Revenues and Expenses of Railways

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1927—CONTINUED

Name of road		Average mileage operated during period.	Operating revenues			Operating expenses					Operating ratio.	Net from railway operation.	Operating income (or loss).	Net ry. operating income.	Net ry. operating income, 1926.
			Freight.	Passenger.	Total (inc. misc.)	Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.					
Michigan Central	Sept.	1,855	$5,255,382	$1,881,801	$8,031,691	$1,063,715	$1,432,194	$121,492	$2,421,928	$251,245	$5,397,717	67.2	$2,633,974	$2,056,494	$2,094,916	$2,325,332
	9 mos.	1,855	46,531,420	15,295,383	68,614,179	8,122,107	12,666,506	1,128,935	22,233,133	2,348,553	47,343,908	69.0	21,270,271	16,591,433	16,367,052	18,030,340
Fittsburgh & Lake Erie	Sept.	231	2,395,510	226,638	2,704,542	435,186	803,968	21,357	803,225	90,333	2,155,371	79.7	549,171	376,771	789,691	914,276
	9 mos.	231	21,901,208	2,102,930	24,779,308	3,530,980	7,735,162	229,110	7,922,185	750,691	20,181,362	81.4	4,597,946	3,062,423	6,397,558	6,639,814
New York, Chicago & St. Louis	Sept.	1,691	4,160,375	173,182	4,498,334	723,553	782,549	123,898	1,520,629	152,771	3,246,735	72.2	1,251,599	982,328	804,158	932,844
	9 mos.	1,691	37,676,618	1,422,687	40,412,114	5,198,857	7,754,476	1,120,736	13,957,338	1,426,833	29,310,384	72.5	11,101,730	8,779,523	7,111,568	7,363,263
N. Y., New Haven & Hartford	Sept.	2,175	6,434,001	4,485,779	12,287,276	1,724,813	2,105,375	83,890	3,788,919	315,744	8,206,063	66.8	4,081,213	3,569,963	2,940,989	2,625,609
	9 mos.	2,175	56,054,333	37,219,789	104,420,250	14,490,388	20,221,638	816,473	35,545,906	2,941,243	75,624,564	72.4	28,795,686	24,096,626	18,094,798	18,316,435
New York Connecting	Sept.	20	227,815	.....	267,131	15,960	12,429	.....	43,926	1,775	74,090	27.7	193,041	157,041	137,275	132,192
	9 mos.	20	1,944,646	.....	2,217,773	232,384	123,254	.....	495,938	16,007	867,583	39.1	1,350,190	1,002,190	856,948	850,699
New York, Ontario & Western	Sept.	569	813,648	264,742	1,267,895	196,553	230,364	19,008	500,073	33,654	981,747	77.4	286,148	236,027	167,576	158,544
	9 mos.	569	6,199,652	2,383,223	10,193,461	1,498,424	1,992,752	163,397	4,269,754	314,221	8,270,441	81.1	1,923,020	1,470,625	969,370	1,701,008
Norfolk & Western	Sept.	2,241	8,978,712	605,135	9,977,752	1,506,927	1,694,280	114,241	2,456,621	210,743	5,946,024	59.6	4,031,728	3,080,867	3,395,443	3,945,246
	9 mos.	2,241	76,656,372	5,320,606	85,028,081	11,457,873	16,892,643	1,004,538	22,026,210	1,898,134	53,165,789	62.5	31,862,292	24,101,430	26,320,051	29,429,514
Norfolk Southern	Sept.	931	643,296	57,321	749,536	93,703	122,639	25,883	278,444	29,345	546,386	72.9	203,150	141,515	126,223	139,603
	9 mos.	931	6,277,217	503,499	7,194,817	886,931	1,112,519	228,638	2,668,949	269,745	5,080,602	70.6	2,114,215	1,623,632	1,334,361	1,363,745
Northern Pacific	Sept.	6,667	8,364,767	1,021,417	10,126,483	909,966	1,455,092	172,715	3,012,636	245,016	5,889,042	58.2	4,237,441	3,228,377	3,343,502	3,432,426
	9 mos.	6,670	52,156,611	9,045,271	67,301,721	9,679,555	13,248,336	1,818,283	23,490,676	2,273,989	51,167,785	76.0	16,133,936	9,765,033	12,553,136	15,599,674
Northwestern Pacific	Sept.	477	542,134	160,817	758,769	110,395	82,026	11,392	260,065	20,885	484,763	63.9	274,006	233,143	218,020	241,764
	9 mos.	477	3,065,291	1,481,674	5,017,238	912,319	733,015	67,705	2,036,701	184,454	3,932,769	78.4	1,084,469	716,794	616,618	1,165,094
Pennsylvania R. R.	Sept.	10,500	40,530,677	12,674,563	58,975,721	7,638,863	11,419,325	768,726	20,015,867	1,562,806	42,094,223	71.4	16,881,498	12,849,099	11,796,675	12,387,793
	9 mos.	10,500	352,910,636	107,162,989	506,133,401	65,684,519	106,847,014	7,113,749	185,320,774	14,227,537	385,585,349	76.2	120,548,052	92,382,799	81,423,929	77,481,267
Baltimore, Chesapeake & Atlantic	Sept.	130	106,148	43,055	160,557	16,080	16,119	2,372	81,745	5,414	121,730	75.8	38,827	30,545	30,678	27,328
	9 mos.	130	745,298	303,780	1,117,163	110,122	315,209	18,224	713,098	32,147	1,188,800	106.4	—71,637	—122,323	—127,528	—135,994
Long Island	Sept.	401	1,118,300	2,558,132	3,908,051	269,274	469,062	29,883	1,429,024	74,591	2,283,233	58.4	1,624,818	1,295,978	1,110,705	919,654
	9 mos.	401	8,847,230	20,270,105	31,053,586	4,250,298	4,818,876	300,115	12,559,210	742,790	22,773,836	73.3	8,279,750	6,155,228	4,640,503	4,875,268
West Jersey & Seashore	Sept.	378	507,458	677,240	1,240,285	153,331	177,189	28,313	488,547	33,657	882,538	71.2	357,747	230,298	210,667	179,294
	9 mos.	378	3,830,866	5,094,468	9,349,398	1,418,301	1,506,857	180,879	4,205,916	244,481	7,564,057	80.9	1,785,341	866,673	735,333	957,677
Peoria & Pekin Union	Sept.	19	26,276	1,385	156,306	22,983	13,069	2,357	67,511	12,845	118,765	76.0	37,541	17,541	37,475	43,246
	9 mos.	19	222,627	21,351	1,372,427	181,759	130,538	13,485	602,216	76,044	1,004,042	73.2	368,385	199,811	387,751	449,066
Pere Marquette	Sept.	2,243	3,530,592	292,951	4,088,641	472,244	801,283	64,835	1,303,396	114,819	2,716,324	66.4	1,372,317	1,148,324	1,052,437	1,125,177
	9 mos.	2,244	29,349,919	2,556,969	33,943,055	3,868,155	7,043,418	566,150	11,330,516	1,007,701	23,826,569	70.2	10,116,486	8,255,697	7,180,930	7,208,132
Pittsburgh & Shawmut	Sept.	102	169,735	2,331	174,888	25,668	42,791	1,459	46,382	7,368	123,668	70.7	51,220	50,023	57,522	34,097
	9 mos.	102	1,300,371	33,091	1,355,498	199,245	428,230	14,367	381,911	81,857	1,105,610	81.6	249,888	239,152	319,391	366,600
Pittsburgh & West Virginia	Sept.	92	283,025	6,237	320,837	22,554	58,538	11,852	65,602	28,299	196,721	61.3	124,116	72,506	187,564	286,785
	9 mos.	92	2,806,670	55,943	3,148,210	207,752	552,365	90,614	641,251	241,927	1,841,219	58.5	1,306,991	874,548	1,502,395	1,917,024
Pittsburgh, Shawmut & Northern	Sept.	198	159,456	1,599	164,577	36,805	30,632	1,536	52,689	7,755	129,417	78.6	35,160	32,162	25,850	32,845
	9 mos.	198	1,315,148	22,335	1,369,105	283,343	267,212	14,065	512,849	60,484	1,137,953	83.1	231,152	204,207	117,352	172,479
Quincy, Omaha & Kansas City	Sept.	249	58,881	9,840	76,452	30,035	6,502	752	32,632	2,588	72,421	94.7	4,031	—1,889	—5,520	15,073
	9 mos.	249	431,977	108,769	606,797	283,031	101,781	7,299	261,947	23,440	676,316	111.5	—69,519	—122,289	—149,935	—110,447
Reading	Sept.	1,139	6,396,872	748,229	7,514,425	1,064,108	1,644,285	83,877	2,768,249	208,260	5,776,136	76.9	1,738,289	1,209,319	1,366,898	2,239,004
	9 mos.	1,139	59,570,494	6,719,248	69,558,452	9,721,892	15,716,401	740,477	26,191,626	1,838,572	54,243,655	78.0	15,314,797	11,367,515	12,175,052	14,984,661
Atlantic City	Sept.	161	126,747	284,907	435,191	82,112	41,729	13,953	208,360	5,647	351,981	80.9	83,210	42,900	9,592	96,405
	9 mos.	161	1,158,497	2,121,306	3,457,792	772,401	306,433	68,031	1,835,784	53,211	3,037,133	87.8	420,659	94,152	—190,291	281,481
Perkiomen	Sept.	41	104,136	5,024	112,325	9,516	5,954	106	46,116	1,184	62,909	56.0	49,416	42,262	35,568	46,967
	9 mos.	41	885,236	41,150	954,213	107,714	58,134	967	418,207	10,477	595,895	62.4	358,318	311,258	247,582	374,780
Port Reading	Sept.	19	140,976	.....	177,620	26,632	16,834	229	61,494	4,845	110,034	61.9	67,586	50,974	72	—16,076
	9 mos.	19	1,393,813	.....	1,842,560	270,089	105,921	2,061	637,635	24,918	1,040,592	56.5	801,968	655,246	94,789	—2,794
Richmond, Fred'ksburg & Potomac	Sept.	117	357,565	307,341	826,779	102,163	171,664	9,551	291,286	35,863	628,487	76.0	198,292	148,028	123,728	146,071
	9 mos.	117	4,328,553	3,053,133	8,916,779	1,104,867	1,538,076	80,944	3,204,072	331,206	6,505,018	73.0	2,411,761	1,903,784	1,404,743	2,209,070
Rutland	Sept.	413	310,574	122,947	580,291	111,041	95,908	11,128	213,552	14,295	447,821	77.2	132,470	99,746	102,997	103,007
	9 mos.	413	2,827,919	890,830	4,783,068	857,207	918,592	97,991	1,904,926	127,839	3,921,549	82.0	861,519	608,392	666,435	727,769
St. Louis-San Francisco	Sept.	5,017	5,919,087	1,166,227	7,613,401	965,256	1,482,330	107,457	2,259,574	234,669	4,929,704	64.8	2,683,697	2,202,648	2,232,337	2,377,309
	9 mos.	4,958	48,230,590	10,625,728	63,386,995	8,676,789	12,520,619	1,027,533	20,617,039	2,188,099	44,403,366	70.1	18,983,629	15,340,898	15,813,810	16,996,870
Ft. Worth & Rio Grande	Sept.	233	76,966	15,429	105,351	29,597	22,681	3,397	56,289	6,124	117,939	111.9	—12,588	—16,814	—26,970	—30,016
	9 mos.	233	702,444	135,692	935,706	235,187	195,887	29,441	479,217	49,659	986,760	105.5	—51,054	—87,851	—164,529	—176,783
St. Louis, San Francisco & Texas	Sept.	137	118,267	14,236	137,358	31,559	24,995	4,469	56,785	7,066	124,868	90.9	12,490	9,963	—9,423	36,348
	9 mos.	137	1,258,360	124,080	1,421,191	285,544	242,240	45,106	533,434	68,664	1,173,857	82.6	247,334	223,853	20,632	137,342
St. Louis Southwestern	Sept.	940	1,226,706	102,154	1,396,958	162,956	168,950	65,487	353,877	61,635	817,982	58.6	578,976	467,786	384,963	416,128
	9 mos.	940	10,819,186	902,889	12,387,643	2,163,543	1,881,175	580,923	3,335,754	582,662	8,639,663	69.7	3,747,980	3,238,356	2,456,061	2,947,590

Revenues and Expenses of Railways

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1927—CONTINUED

Name of road		Average mileage operated during period.	Operating revenues			Operating expenses						Operating ratio.	Net from railway operation.	Operating income (or loss).	Net ry. operating income.	Net ry. operating income, 1926.
			Freight.	Passenger.	Total (inc. misc.)	Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.					
St. Louis, Southwestern of Texas	Sept.	807	$633,519	$58,409	$42,588	$99,563	$105,336	$28,266	$245,786	$34,950	$516,705	69.6	$225,883	$199,156	$242,406	$112,334
	9 mos.	807	4,407,217	478,131	5,321,180	1,555,277	1,022,780	254,518	2,194,177	301,355	5,362,005	100.8	—40,825	—283,200	167,021	76,047
Seaboard Air Line	Sept.	4,306	3,485,971	586,134	4,486,645	579,635	698,173	214,042	1,763,279	209,729	3,512,963	78.3	973,682	696,086	696,186	1,080,561
	9 mos.	4,286	35,332,423	7,522,661	47,015,986	5,808,509	7,024,038	1,857,087	18,248,245	1,857,594	35,496,009	75.5	11,519,977	8,753,314	8,061,248	8,657,505
Southern Ry.	Sept.	6,771	9,773,160	2,304,515	13,067,180	1,542,957	1,919,428	242,969	4,002,737	346,019	8,136,819	62.3	4,930,361	4,062,070	4,036,149	3,920,132
	9 mos.	6,771	81,921,895	20,451,931	110,865,958	15,846,661	19,859,174	2,305,881	37,173,969	3,082,220	78,960,617	71.2	31,905,341	24,901,107	23,856,860	26,066,023
Alabama Great Southern	Sept.	314	741,072	161,222	960,467	139,927	154,814	21,488	28,031	23,424	630,130	65.6	330,337	263,775	283,454	300,207
	9 mos.	314	5,784,906	1,427,484	7,691,551	1,306,183	1,510,399	187,101	2,337,634	208,846	5,616,277	73.0	2,075,274	1,538,686	1,774,893	1,979,854
Cinn., New Orleans & Tex. Pac.	Sept.	338	1,403,820	288,143	1,789,635	316,438	330,829	42,552	485,465	53,358	1,241,256	69.4	548,379	427,687	429,154	581,259
	9 mos.	338	12,990,400	2,783,668	16,696,870	2,622,260	3,279,481	394,719	4,813,653	476,912	11,722,089	70.2	4,974,781	3,979,593	3,779,396	4,720,368
Georgia Southern & Florida	Sept.	401	280,649	92,505	400,542	77,521	65,929	3,684	133,264	4,112	288,633	72.1	111,909	90,167	87,438	56,461
	9 mos.	401	2,466,144	847,530	3,575,032	773,920	720,011	96,290	1,470,738	89,775	3,182,823	89.0	392,209	201,402	101,325	709,100
New Orleans & Northeastern	Sept.	204	410,306	78,643	520,388	65,346	68,189	12,067	135,107	15,393	300,527	57.8	219,861	172,320	131,769	145,611
	9 mos.	204	3,330,123	714,149	4,342,529	616,085	720,970	115,500	1,291,370	140,359	2,925,046	67.4	1,417,483	1,032,305	720,026	883,791
Northern Alabama	Sept.	110	120,285	8,174	131,174	23,458	3,666	1,818	38,702	2,695	70,339	53.6	60,835	56,585	32,584	18,791
	9 mos.	110	944,793	73,892	1,043,594	204,883	36,651	20,616	334,892	25,332	622,222	59.6	421,372	373,537	146,520	144,933
Southern Pacific	Sept.	8,945	15,319,920	3,434,828	20,530,280	2,244,395	2,689,654	435,254	6,348,581	691,384	12,754,504	62.1	7,775,776	6,357,914	5,692,647	6,060,628
	9 mos.	8,933	114,572,466	31,190,227	160,668,867	21,611,915	26,278,817	3,540,361	52,531,458	5,738,034	112,761,804	70.2	47,907,063	34,720,360	31,866,206	33,129,551
So. Pac. Steamship Lines	Sept.	....	833,129	63,164	1,049,134	25,340	178,817	14,501	601,416	34,143	854,217	81.4	194,917	190,860	192,841	84,954
	9 mos.	....	7,077,930	421,023	9,112,567	160,802	1,780,765	146,171	5,656,944	337,072	8,081,754	88.7	1,030,813	983,981	998,355	1,146,575
Texas & New Orleans	Sept.	4,574	5,176,549	998,199	6,626,778	1,049,726	1,188,831	162,944	2,209,050	259,615	4,845,480	73.1	1,781,298	1,400,086	1,149,804	1,639,293
	9 mos.	4,569	38,905,364	9,133,880	52,355,873	9,815,567	10,636,546	1,477,818	19,434,563	2,396,149	43,872,768	83.8	8,483,105	5,731,417	3,705,653	4,412,345
Spokane, Portland & Seattle	Sept.	554	767,420	107,599	938,417	144,432	105,613	9,327	232,536	21,957	518,363	55.2	420,054	334,858	305,086	354,106
	9 mos.	554	5,023,629	983,628	6,538,579	945,493	892,633	101,321	1,870,780	206,441	4,061,772	62.1	2,476,807	1,745,534	1,661,367	1,578,716
Tennessee Central	Sept.	296	256,889	23,646	295,198	60,210	50,422	9,202	101,107	11,632	232,419	78.7	62,779	58,237	39,714	41,831
	9 mos.	296	2,143,737	221,676	2,491,792	499,564	426,649	79,573	889,431	115,721	2,008,453	80.6	483,339	435,026	284,761	241,426
Terminal Railroad Ass'n of St. L.	Sept.	55	.....	.....	1,124,865	207,168	99,538	2,155	420,415	39,820	772,367	68.7	352,498	263,002	344,787	412,831
	9 mos.	55	.....	.....	9,986,808	1,680,287	884,008	19,943	3,938,135	240,832	6,792,721	68.0	3,194,087	2,306,381	3,029,767	3,434,407
Texas Mexican	Sept.	162	77,888	6,672	93,492	18,361	16,977	3,427	39,656	6,446	84,206	90.1	9,286	—1,913	—8,955	75,287
	9 mos.	162	898,388	57,842	1,048,044	206,855	192,724	35,668	405,220	54,555	893,695	85.3	154,349	100,699	24,745	468,037
Toledo, Peoria & Western	Sept.	239	174,916	2,491	185,285	43,305	15,452	9,773	65,379	7,500	141,409	76.3	43,876	43,876	29,056	—10,706
	9 mos.	242	1,179,274	50,385	1,305,508	313,788	174,761	70,186	547,015	65,400	1,171,082	89.7	134,426	114,303	15,004	—147,793
Toledo Terminal	Sept.	28	.....	.....	134,199	35,824	14,587	581	58,887	4,072	113,951	84.9	20,248	2,431	23,444	45,436
	9 mos.	28	.....	.....	1,170,718	187,870	140,843	4,970	462,447	41,260	837,390	71.6	333,328	163,382	430,050	431,246
Trinity & Brazos Valley	Sept.	367	240,490	10,540	258,505	46,956	32,002	5,332	95,166	11,238	190,621	73.7	67,884	60,630	37,858	—48,459
	9 mos.	367	1,758,959	81,460	1,899,793	451,616	290,935	48,526	872,782	109,003	1,715,904	90.3	183,889	117,806	—84,467	—330,555
Ulster & Delaware	Sept.	128	44,085	20,150	99,436	22,123	13,969	1,450	53,693	4,878	96,113	96.7	3,323	—2,427	—7,538	1,792
	9 mos.	128	390,581	226,863	929,645	179,824	148,061	15,099	457,056	45,802	845,842	91.0	83,803	32,053	—7,351	37,805
Union Railroad of Penna.	Sept.	45	.....	.....	887,859	201,258	183,738	166	358,159	11,507	754,828	85.0	133,031	112,281	188,302	412,441
	9 mos.	45	.....	.....	7,743,025	1,124,066	1,823,044	1,451	3,489,006	116,350	6,553,803	84.6	1,189,222	998,335	1,628,896	2,459,422
Union Pacific	Sept.	3,712	10,421,915	1,497,712	12,845,855	1,100,453	2,088,981	150,218	2,963,562	318,675	6,827,966	53.2	6,017,889	5,464,842	4,754,378	5,017,961
	9 mos.	3,713	60,194,908	12,059,459	79,393,895	10,221,172	16,333,103	1,590,517	21,387,172	2,794,886	53,943,192	67.9	25,450,703	19,289,461	16,999,128	18,582,177
Oregon Short Line	Sept.	2,539	3,308,629	376,174	3,929,087	509,491	472,166	51,765	967,734	122,707	2,188,094	55.7	1,740,993	1,509,030	1,361,404	1,292,749
	9 mos.	2,538	20,127,264	3,265,855	25,390,427	4,550,310	4,255,233	477,229	7,515,355	1,071,979	18,409,583	72.5	6,980,844	4,714,757	3,981,868	4,677,171
Oregon, Wash. R. R. & Nav. Co.	Sept.	2,237	2,502,398	353,053	3,078,619	419,557	400,325	75,639	963,277	122,940	2,006,805	65.2	1,071,814	849,921	640,608	779,311
	9 mos.	2,237	16,183,164	2,890,958	20,998,372	3,981,448	3,354,471	710,849	7,563,715	1,062,012	16,914,005	80.5	4,084,367	2,363,818	1,230,501	2,933,734
Los Angeles & Salt Lake	Sept.	1,210	1,535,101	476,244	2,350,197	397,464	341,833	69,969	580,025	75,579	1,601,938	68.2	748,259	599,537	477,434	503,199
	9 mos.	1,209	13,070,947	3,928,970	19,122,973	3,600,469	3,691,914	718,631	5,862,459	682,814	15,539,194	81.3	3,583,779	2,341,440	1,397,041	1,832,924
St. Joseph & Grand Island	Sept.	258	323,815	13,745	356,793	64,048	49,354	3,097	114,179	14,940	245,618	68.8	111,175	89,797	64,019	64,779
	9 mos.	258	2,175,389	120,496	2,462,324	536,954	381,021	27,528	884,150	134,000	1,963,653	79.7	498,671	358,745	234,942	328,249
Utah	Sept.	111	154,283	.....	154,754	29,642	37,869	361	29,843	6,091	103,806	67.1	50,948	43,125	27,269	29,637
	9 mos.	111	1,237,497	36	1,241,068	162,765	354,833	3,282	239,596	53,525	814,001	65.6	427,067	346,734	305,261	244,041
Virginian	Sept.	545	1,656,064	46,829	1,804,563	196,831	374,748	13,421	355,511	33,011	966,320	53.5	838,243	713,240	775,106	1,127,179
	9 mos.	545	15,751,493	487,250	17,312,543	1,926,730	3,308,361	125,394	3,410,841	305,249	9,010,722	52.0	8,301,821	6,977,432	7,461,758	7,393,382
Wabash	Sept.	2,524	4,775,395	731,644	5,955,603	797,846	968,113	152,411	2,098,209	178,379	4,205,152	70.6	1,750,451	1,482,694	1,199,480	1,218,723
	9 mos.	2,524	40,751,965	6,315,152	50,686,740	7,462,229	8,923,488	1,478,527	19,533,124	1,641,835	39,087,568	77.1	11,591,172	9,254,703	6,722,198	8,092,470
Ann Arbor	Sept.	293	406,972	20,684	446,148	73,352	96,134	14,645	169,447	11,101	359,051	80.5	87,097	64,735	46,013	126,706
	9 mos.	293	3,886,153	190,884	4,224,071	538,935	889,049	114,101	1,641,832	103,578	3,274,501	77.5	949,570	722,932	558,206	686,638
Western Maryland	Sept.	804	1,726,285	42,732	1,830,115	311,407	361,494	40,536	461,320	42,587	1,222,984	66.8	607,131	502,131	577,365	571,697
	9 mos.	804	15,723,379	405,403	16,706,227	2,620,965	3,549,008	352,677	4,681,769	404,005	11,630,681	69.6	5,075,546	4,165,546	4,441,055	4,153,973
Western Pacific	Sept.	1,042	1,571,105	160,562	1,983,416	267,047	206,052	42,624	546,857	44,419	1,242,770	62.7	740,646	612,205	569,020	720,659
	9 mos.	1,042	9,633,412	1,380,473	11,995,591	2,397,443	2,298,801	406,705	3,919,360	398,845	9,857,334	82.2	2,138,257	1,010,379	1,434,040	3,182,628
Wheeling & Lake Erie	Sept.	511	1,407,276	27,788	1,550,883	230,011	202,261	33,252	481,501	43,830	1,192,168	76.9	358,715	239,713	246,377	482,987
	9 mos	511	12,940,394	290,765	14,226,489	1,827,784	3,509,282	304,495	4,343,943	411,960	10,412,333	73.2	3,814,156	2,637,333	2,679 527	3,400,267

News of the Week

(*Continued from page* 1005)

made 110 ft. wide. The western wing of the building is to be a hotel, and a 14-story office building is included in the plan.

The general contract for construction has been let to Dwight P. Robinson & Co., New York.

A. T. C. on the Southern

The Southern Ry. reports the completion of the work of installing automatic train control on its line between Atlanta, Ga., and Birmingham, Ala., 167 miles; and with this apparatus in service the company now has 3,370 miles of track equipped with automatic train control. And, since January 1, 1927, the automatic (roadside) block system has been extended no less than 1,279 miles.

The lines on which automatic train control is now in operation are the following:

Cincinnati and Jacksonville, 840 miles; Spencer, N. C., and Atlanta, 306 miles, all double track; Chattanooga and New Orleans, 498 miles; Bristol and Chattanooga, 242 miles; Chattanooga and Memphis, 314 miles; Salisbury, N. C., and Morristown, Tenn., 228 miles; Asheville and Spartanburg, 66 miles; Charlotte and Columbia, 108 miles; Atlanta and Birmingham, 167 miles; total 2,769 miles.

Wage Statistics for August

The Interstate Commerce Commission's summary of wage statistics of Class 1 railways shows a total of 1,796,194 employees as of the middle of the month of August, a decrease of 27,141, or 1.5 per cent, compared with the number reported for the preceding month. Owing mainly to the fact that August had two more working days than July, the total compensation shows an increase of 3.2 per cent, to $257,262,361. Compared with the returns for the preceding month last year, the number of employees in August shows a decrease of 3 per cent. The total compensation, however, shows an increase of 0.2 per cent.

This increase in compensation in the face of a decrease in the number of employees is said to be attributable to increases in the average hourly earnings, particularly in the transportation groups, which, however, were offset in part by a reduction in the number of hours paid for.

Operating Revenues and Operating Expenses of Class I Steam Railways in the United States

Compiled from the Monthly Reports of Revenues and Expenses for 183 Steam Railways Including 15 Switching and Terminal Companies

FOR THE MONTH OF SEPTEMBER, 1927 AND 1926

Item	United States		Eastern District		Pocahontas Region		Southern Region		Western District	
	1927	1926	1927	1926	1927	1926	1927	1926	1927	1926
Average number of miles operated	238,812.08	237,936.62	59,383.92	59,532,27	5,612.39	5,604.86	39,789.79	39,417.93	134,025.98	133,381.56
Revenues:										
Freight	$426,751,971	$444,973,089	$175,397,648	$189,382,106	$21,961,898	$22,981,811	$54,415,472	$55,965,027	$174,976,953	$176,644,145
Passenger	*a* 86,293,079	*b* 92,736,454	46,248,667	48,657,576	1,712,371	1,921,175	9,910,435	11,626,685	28,421,606	30,531,018
Mail	7,651,690	7,560,545	2,893,390	2,914,532	196,348	192,091	1,121,357	1,119,359	3,440,595	3,334,563
Express	13,925,309	13,380,376	7,073,711	6,388,213	318,943	303,154	1,448,020	1,664,938	5,084,635	5,024,071
All other transportation	17,845,583	18,724,025	9,867,810	10,579,822	205,508	234,190	940,448	1,206,255	6,831,817	6,703,758
Incidental	11,886,731	13,084,176	5,771,585	6,347,882	351,616	488,236	1,094,124	1,285,341	4,669,406	4,962,717
Joint facility—Cr.	1,168,123	1,195,620	490,721	469,063	10,510	18,874	136,939	137,574	529,953	570,109
Joint facility—Dr.	431,583	414,446	136,074	144,298	2,032	2,102	34,313	33,550	259,164	234,496
Ry. operat'g revenues	565,090,903	591,239,839	247,607,458	264,594,896	24,755,162	26,137,429	69,032,482	72,971,629	223,695,801	227,535,885
Expenses:										
Maintenance of way and structures	76,696,585	78,747,089	33,016,976	34,848,273	3,419,799	3,666,678	9,895,220	11,302,311	30,364,590	28,929,827
Mainten'ce of equipm't	99,809,309	107,363,695	47,262,034	52,195,938	4,635,022	4,740,734	13,206,625	14,062,891	34,705,628	36,364,132
Traffic	9,925,994	9,618,892	3,755,107	3,649,795	270,372	259,231	1,675,324	1,661,246	4,225,191	4,048,620
Transportation	180,752,738	184,338,685	84,023,332	86,318,916	6,179,101	6,360,662	22,894,333	23,609,353	67,655,972	68,049,754
Miscellaneous operat'ns	4,967,350	5,014,312	2,258,293	2,298,215	73,416	85,444	439,881	486,629	2,195,760	2,144,024
General	16,074,882	15,131,134	7,393,318	6,820,886	547,533	515,272	2,059,222	2,007,702	6,074,809	5,787,274
Transportation for investment—Cr.	1,838,849	1,451,431	333,479	216,603	70,717	92,276	78,737	204,114	1,355,916	938,438
Ry. operat'g expenses	386,388,009	398,762,376	177,375,581	185,915,420	15,054,526	15,535,745	50,091,868	52,926,018	143,866,034	144,385,193
Net revenue from railway operations	178,702,894	192,477,463	70,231,877	78,679,476	9,700,636	10,601,684	18,940,614	20,045,611	79,829,767	83,150,692
Railway tax accruals	35,562,700	37,222,595	14,987,535	15,784,076	1,925,465	2,073,012	4,681,828	4,838,266	13,967,872	14,527,241
Uncollectible ry. rev's	121,613	128,211	53,572	57,685	1,697	3,012	14,661	17,573	51,683	49,941
Ry. operating income	143,016,581	155,126,657	55,190,770	62,837,715	7,773,474	8,525,660	14,244,125	15,189,772	65,810,212	68,573,510
Equipm't rents—Dr. bal.	8,177,567	7,645,754	3,118,813	3,406,442	*d* 574,977	*d* 455,197	32,265	44,894	5,601,466	4,649,615
Joint facility rent—Dr. balance	2,070,942	1,717,461	995,831	730,421	83,743	112,350	18,837	59,972	972,531	814,718
Net railway operating income	132,770,072	145,763,442	51,076,126	58,700,852	8,264,708	8,868,507	14,193,023	15,084,906	59,236,215	63,109,177
Ratio of expenses to revenues (per cent)	68.38	67.45	71.64	70.26	60.81	59.44	72.56	72.53	64.31	63.46

FOR NINE MONTHS ENDED WITH SEPTEMBER, 1927 AND 1926

Average number of miles operated	238,527.91	237,856.51	59,434.82	59,580.60	5,606.64	5,603.79	39,666.48	39,303.32	133,819.97	133,368.80
Revenues:										
Freight	3,475,192,022	3,529,483,037	1,531,203,121	1,561,658,146	188,957,737	185,276,330	473,316,553	492,668,609	1,281,714,611	1,289,879,952
Passenger	*c* 748,267,676	*e* 794,659,217	385,121,831	398,524,276	15,503,605	16,749,302	97,755,779	117,469,056	249,886,461	261,916,583
Mail	70,117,808	70,449,491	26,712,422	26,761,389	1,820,446	1,842,160	10,420,957	10,621,560	31,163,983	31,224,382
Express	102,587,980	106,145,150	48,421,934	50,232,585	2,338,407	2,337,308	13,251,866	14,218,285	38,575,773	39,356,972
All other transportation	154,655,683	157,226,430	87,328,887	89,743,999	1,885,132	2,075,837	8,280,110	9,369,444	57,161,554	56,037,150
Incidental	97,391,806	100,337,235	48,422,625	49,745,044	3,484,619	3,862,544	10,349,237	12,009,227	35,135,325	34,720,420
Joint facility—Cr.	10,407,901	9,932,402	4,192,341	3,987,052	134,071	131,640	1,480,697	1,276,290	4,600,792	4,537,420
Joint facility—Dr.	3,747,402	3,597,479	1,209,256	1,200,445	20,842	19,952	305,027	306,528	2,212,277	2,070,554
Ry. operat'g revenues	4,654,873,474	4,764,635,483	2,130,193,905	2,179,452,046	214,103,175	212,255,169	614,550,172	657,325,943	1,696,026,222	1,715,602,325
Expenses:										
Maintenance of way and structures	661,890,063	654,914,475	275,360,590	277,388,796	29,341,041	29,057,773	90,471,888	95,407,419	266,716,544	253,060,487
Mainten'ce of equipm't	924,539,513	964,128,474	439,767,564	465,381,036	44,592,513	44,002,304	122,401,359	127,071,583	317,778,077	327,673,551
Traffic	90,425,043	85,281,447	33,524,186	31,217,446	2,379,576	2,243,502	15,636,476	15,209,233	38,884,805	36,611,266
Transportation	1,621,279,148	1,626,490,835	771,254,966	768,906,869	55,579,661	55,439,715	215,393,884	226,935,137	579,050,637	575,209,114
Miscellaneous operat'ns	42,491,050	42,509,605	19,521,416	19,496,758	754,212	820,031	4,670,937	5,140,952	17,544,485	17,051,864
General	144,161,396	138,601,822	65,684,639	63,567,022	5,055,798	4,574,726	18,850,625	18,116,861	54,570,334	52,343,213
Transportation for investment—Cr.	12,029,894	11,920,613	2,158,343	1,477,711	413,782	440,452	1,067,983	2,225,601	8,389,786	7,776,849
Ry. operat'g expenses	3,472,756,319	3,500,006,045	1,602,955,018	1,624,480,216	137,289,019	135,697,599	466,357,186	485,655,584	1,266,155,096	1,254,172,646
Net revenue from railway operations	1,182,117,155	1,264,629,438	527,238,887	554,971,830	76,814,156	76,557,570	148,192,986	171,670,359	429,871,126	461,429,679
Railway tax accruals	288,364,848	292,386,982	120,097,157	122,071,728	16,164,932	15,198,957	38,066,044	39,971,741	114,036,715	115,144,556
Uncollectible ry. rev's	1,106,373	1,191,941	441,597	581,312	41,138	28,721	176,506	146,681	447,132	435,227
Ry. operat'g income	892,645,934	971,050,515	406,700,133	432,318,790	60,608,086	61,329,892	109,950,436	131,551,937	315,387,279	345,849,896
Equipm't rents—Dr. bal.	65,634,285	61,980,342	34,762,565	33,460,345	*d* 4,415,984	*d* 5,215,680	4,646,488	9,434,465	30,641,216	24,301,212
Joint facility rent—Dr. balance	18,707,300	17,652,659	9,058,415	8,059,561	886,321	874,199	940,859	1,021,341	7,821,705	7,697,558
Net railway operating income	808,304,349	891,417,514	362,879,153	390,798,884	64,137,749	65,671,373	104,363,089	121,096,131	276,924,358	313,851,126
Ratio of expenses to revenues (per cent)	74.60	73.46	75.25	74.54	64.12	63.93	75.89	73.88	74.65	73.10

a Includes $3,728,250 sleeping and parlor car surcharge. *b* Includes $3,736,518 sleeping and parlor car surcharge. *c* Includes $30,699,612 sleeping and parlor car surcharge. *d* Deficit or other reverse items. *e* Includes $31,601,523 sleeping and parlor car surcharge.

Compiled by the Bureau of Statistics, Interstate Commerce Commission.

Mechanical Division Convention and Exhibit at Atlantic City

At a joint meeting of the General Committee of the Mechanical Division, American Railway Association, and the Executive Committee of the Railway Supply Manufacturers' Association at New York, November 16, arrangements were made to hold the 1928 convention and exhibit at Young's Million Dollar Pier, Atlantic City, N. J. Arrangements for the proper housing of the convention and exhibit include the erection of a substantial building on the ocean side of the boardwalk adjoining the pier, which will be accessible both from the boardwalk and the pier. This building will provide approximately 50,000 sq. ft. of additional floor space.

An increased demand for space for motor bus and truck exhibits is already indicated, and it is understood that inquiries are being received from a number of other companies not previously exhibiting.

The original dates for the convention, namely, June 13 to 20, decided upon at a joint meeting of the executive bodies of the two associations during the last Mechanical Division convention at Montreal, will be adhered to.

Employment Guaranteed

The Seaboard Air Line has given formal assurance to the representatives of the shop crafts employed in its maintenance of equipment department, that at least 2,170 men will be employed in this department throughout the year of 1928. This agreement going into effect on January 1, is thus an important step in the stabilization of employment in the mechanical department of this road. This action follows conferences between the railroad company and the shopmen extending over several months. The traffic of the Seaboard Air Line is of a highly seasonal character which results in wide fluctuations in the requirements of the mechanical department from month to month.

The number specified is estimated to provide a minimum force at each point with the possibility of being increased if there should be an important increase in the volume of business done by the road.

The agreement, of course, has nothing to do with unclassified work; and in certain places there may be members of the unions at work for the road and yet who are not covered by the agreement.

The secretary of the shop crafts in a circular to the members, reminds them that it is the duty of all to co-operate in every way possible to make the new plan a complete success.

Additions to the forces are already being made.

Hudson River Tunnel Opened

The Holland vehicular tunnel beneath the Hudson river between New York and Jersey City, was opened for traffic on Saturday afternoon, November 12, with imposing ceremonies, on both sides of the river; and in the first 24 hours after the opening of the roadways for general traffic (at 12:01 a. m. on the 13th) 52,285 automobiles passed through; and these cars paid tolls aggregating over $25,000. Freight trucks, on which the tolls will be higher (being adjusted to the size of truck) were not admitted until the 14th (Monday) but their number produced a large increase in the average toll received. In 16 hours on Monday the number of vehicles recorded was 10,055 and the reported receipts over $18,000.

This tunnel, which has cost the states of New York and New Jersey $48,400,000, consists of two tubes, one for westbound traffic and one for eastbound, and is 9,250 feet long. The length beneath the river is 5,480 feet. The vehicle capacity per hour is given as 3,800. The maximum ascending grade is 3.8 per cent and the maximum descending grade is 40.6 per cent. The tunnel is named for Clifford M. Holland who was its chief engineer, but who died in 1924. The westbound tunnel is entered at Broome Street, near Hudson, in Manhattan and its exit is near the Lackawanna freight yard in Jersey City. The eastbound tunnel is entered near the Erie yard in Jersey City and the exit is at Hudson and Varick streets, Manhattan.

Frisco Automatic Train-Stop Approved

The Interstate Commerce Commission, Division 1, has approved the installation of the automatic train-stop system of the National Safety Appliance Company—intermittent magnetic type, with forestalling feature—on a part of the Southwestern division of the St. Louis-San Francisco from Monett, Mo., to Afton, Okla., 66.1 miles, pursuant to the commission's second order. The installation adjoins that from Springfield to Monett, Mo., under the first order. The cost of the roadway installation was reported as $100,132, and that of the equipment for 68 locomotives as $42,719. The installation is approved without exceptions.

The automatic visual signals on this section of the road were installed in 1924 and the system was designed with a view to the later addition of automatic train control. There are three interlocking plants in this territory; two, mechanical, at crossings of other railroads and a third at Pierce City which is a low voltage electric plant and controlled from a desk machine of four levers. The automatic roadside signals are semaphores, lower quadrant; two arms at each post. At double signal locations one magnet serves for both signals.

The installation is approved without exceptions, but certain requirements with which the company is expected to comply are set forth in six paragraphs. These have to do with imperfect operation of the forestalling valve and the Duplex control valve.

During the inspection, 12 locomotives were found in which the control valves were not fixed at the right height above the rail. A cautionary paragraph says that the locomotive equipment has to be kept in order by men at a number of widely separated points and that locomotives have to be run for long periods in non-train-stop territory.

Traffic

The Interstate Commerce Commission, November 17, announced reaffirmation on reconsideration of its previous order reducing the rates on deciduous fruits from California to eastern points under the Hoch-Smith resolution.

Part 9 of the Interstate Commerce Commission's freight rate investigation, covering rates on livestock in the western district, and a number of related cases, have been assigned for hearing at Chicago on January 12 at St. Paul on January 9 and at Kansas City on January 23.

The Kettle Valley between Hope, B. C., and Brodie was blocked for five days on October 27 when a tunnel near Iago, B. C., in the Coquihalla Pass, caved in while workmen were facing its sides with rock. Service was resumed on October 31 after more than 8,000 cu. yd. of rock had been removed.

Freight and passenger service on the Missouri & North Arkansas between Helena, Ark., and Kensett was resumed on November 7 following the completion of the reconstruction of the bridge over the White river at Georgetown, Ark. The main span in this bridge, 300 feet long, was washed out by overflow waters on September 15 and traffic between Helena and Kensett has been detoured since that date.

The Interstate Commerce Commission has issued a supplemental report clarifying the findings of an earlier report in connection with its investigation of reight rates on anthracite in prepared sizes from mines in Pennsylvania to points in northern New York, and permitting the Lehigh Valley to establish a rate of $2.65 per ton from mines served by it to certain points in northern New York instead of a rate of $2.88.

The Chicago Claim Conference held its 37th regular meeting at Detroit, Mich., on November 17 and 18. Among the subjects considered were: Condensation of moisture, co-operation between freight claim conferences and sectional committees of the American Railway Protective Association, metal tie system, bulk chinaware, rough handling of cars, damage to sheet steel, stray animals at the Union Stock Yards, Chicago, continuance of the inspections of crippled animals at the Union Stock Yards, live stock billed not to be unloaded in public pens for feed and water, settlement of claims for loss of coal, tolerance deduction on coal claims, cover fasteners on bushel baskets and salvaging damaged flour.

Hearings Begun on Lake Cargo Coal Rate Reductions

A hearing was begun before Commissioners Campbell and McManamy of the Interstate Commerce Commission at Washington on November 16 on the 20 cent re-

duction in lake cargo coal rates proposed by the roads serving the "southern district" coal fields of Virginia, West Virginia, Kentucky and Tennessee to meet the reduction ordered by the commission in the rates from the Pennsylvania and Ohio fields. Traffic officers of the Chesapeake & Ohio, Louisville & Nashville, Norfolk & Western and Virginian testified that the rates, which have been suspended by the commission, were felt to be necessary for the preservation of the interests of the roads and the coal operators, in spite of the view expressed by the commission that the southern lines should not meet the reduction ordered from the "northern" fields. They asserted that the lake cargo coal traffic, being handled in the summer months, is a very desirable traffic, and that rather than lose a large part of it they had preferred to accept a rate which would yield only a small return.

"While this proposed reduction will mean a loss to the Chesapeake & Ohio of approximately $2,000,000 annually," said F. M. Whitaker, traffic vice-president of the C. & O., "I am confident failure to make such a reduction would result in much greater loss to us, and thorough investigation made before reducing our rates demonstrates this. The lake business is a tremendous help to the operators in keeping their mines in full operation, which means maintaining our tonnage. Commercial shipments are balanced with lake shipments and any change affecting adversely the lake business will affect not only the volume of the commercial coal business but of all other business on the lines of the railways, particularly in our coal districts. Any loss in volume of lake coal business will increase the cost of handling all other business and throw an undue burden on other traffic." He said the railroads and operators of the southern fields knew that the northern operators were endeavoring to reduce their wage scales to the same level as those in the southern fields and were meeting with a considerable degree of success, and were improving their production facilities, so that the coal from the northern fields could be produced and would be sold f. o. b. mines at as low a price as the cost of production in the southern fields would permit that coal to be sold. Therefore the differential of 25 cents per ton, which has been the basic difference in favor of the northern fields for many years "is a handicap that cannot be overcome except by some extraordinary and unusual conditions."

B. W. Herrman, vice-president of the Norfolk & Western, gave similar testimony, estimating the reduction on the N. & W. lake coal traffic at $1,000,000 a year. He also made the point that the proposed reductions would restore the relation between the rates fixed by the commission in 1917.

The political interest in the controversy between the northern and southern coal districts, which was the cause of much discussion in Congress during the last session, was indicated by the large number of governors and other state officers and members of Congress in the large audience that attended the hearing.

Foreign

The S.S. Mauretania left New York at midnight on November 9 and arrived in Plymouth on November 15. The Great Western Railway of England ran a special boat train for passengers arriving on the Mauretania, consisting of a four-cylinder locomotive No. 4086 hauling 8 cars, which completed the journey from Plymouth dock to Paddington Station, London, in 231 minutes, a distance of 227 miles at an average speed of 59 miles per hour.

Meeting of the International Railway Union

The congress of the International Railway Union was held in Stockholm in June, according to Consul-General Osborn, reporting on it. No decisions were made at this congress, the propositions merely being discussed and, if approved, submitted to the executive committee, at Paris, of the International Railway Union, which in turn communicates with the respective railway administrations.

The principal railway lines of the following countries are represented in the International Railway Union: Austria, Belgium, Bulgaria, China, Czechoslovakia, Denmark, Esthonia, Finland, France, Germany, Great Britain, Greece, Holland, Hungary, Italy, Japan, Latvia, Lithuania, Luxemburg, Norway, Poland, Portugal, Rumania, Saar Territory, Spain, Sweden, Switzerland, Union of Soviet Socialistic Republics (Russia), and Yugoslavia.

With regard to passenger rates for infants and children, it was agreed that the following common stipulation be recommended: Children below the age of 4, free; children between ages 4 and 10, and children below that age in case a separate seat be demanded for them, a fare not exceeding half that of an adult.

Some discussion arose regarding the rebates to be granted members of societies traveling in groups, the Swedish representative stating that the Swedish State Railways granted only 25 per cent, while other countries generally had a rebate of 30 per cent. In order to arrive at a uniform system of rebates, the Swedish representative promised to take the matter up with his railway administration.

Facilities to be given students and Boy Scouts traveling in groups were discussed, and it was found that different rates were in effect in different countries, Great Britain granting a reduction of 50 to 75 per cent for adults and children, respectively, while Italy, for instance, granted only 30 and 50 per cent, respectively. It was agreed, however, that it be proposed to the respective administrations to adopt the most liberal reductions possible.

It was further agreed that no definite statement should be made with regard to eventual reductions to be granted delegates to congresses or conventions, as this would in each separate case be dependent on the financial status of the arranging party.

It was found impossible in some cases for the different countries to apply uniform stipulations with regard to packing and crating of freight, but in general the same regulations are to be followed, as far as practicable.

The adoption of uniform regulations for the transportation in foreign territory of empty passenger and freight cars and refrigeration cars was discussed. The question of special stipulations for coal wagons also was taken up.

Delegates of the technical commission of the Union on their way to Stockholm and during their stay in that city, visited several large Swedish industrial plants, such as the Hydqvist & Holm locomotive works at Trollhattan and the A/B Gasaccumulator plant in Stockholm for automatic light signals.

The use of brake shoes in one piece or in two, with a detachable wearing block of cast iron with some binding material, as used on the American railways, was the subject of much discussion. Double brake shoes have been in use on Swedish railway cars for the past 20 years and, although no final decision was arrived at, it seems probable that the double brake shoe will be adopted as standard equipment in Europe, at least on cars intended for international traffic.

The construction of heavier railway cars with a greater loading capacity and the building of stronger railway bridges also was taken up.

A St. Andrew's cross, as used at railway crossings in the United States, has been adopted as the standard sign of warning at unguarded railway crossings in Europe; further protective measures were under discussion, although without any definite results being arrived at. A proposal was made that the tail lights of automobiles should be given some other color than red, as it might be possible that the red light of an automobile at a railway crossing or where the road runs parallel with the line might be misunderstood by the locomotive driver as a danger signal. As no cases of this actually happening could be cited, the matter did not lead to action. The opinion of the Swedish representative was that the railway men considered themselves to have a monopoly on red and green lights for signals, and that it was more a question of the railways' prestige than of actual necessity.

Protective measures to be made obligatory on all electric installations were proposed and submitted to the executive committee for further treatment. Electric lighting equipment and installations in railway cars have already been standardized.

After a great deal of discussion it was decided that the executive committee should take up the question of the obligatory adoption of automatic brakes, of either the Westinghouse or the Kunze-Knorr system, on freight cars in Europe. It is said that some representatives intend to work for the introduction of other braking systems, although nothing was done to this end at the congress.

With regard to the adoption of automatic coupling for railway cars, a special committee was appointed to investigate the advantages of an automatic coupling of the same type as that at present in use in the United States.

Equipment and Supplies

Locomotives

THE DETROIT & TOLEDO SHORE LINE has ordered 4 Mikado type locomotives, from the Baldwin Locomotive Works. Inquiry for 3 or 4 Mikado type locomotives was reported in the *Railway Age* of October 15.

Freight Cars

THE GREAT NORTHERN is inquiring for 4 heater cars.

THE AMERICAN AGRICULTURAL CHEMICAL COMPANY, New York, has ordered 3 tank cars of 50 tons' capacity for carrying sulphuric acid. These cars were ordered from the General American Tank Car Corporation.

THE STERLING PRODUCTS COMPANY, Easton, Pa., has ordered 1 rubber lined tank car, of 40 tons and 8,000 gal. capacity, for the transportation of muriatic acid. The car was ordered from the General American Tank Car Corporation.

Passenger Cars

THE PITTSBURGH RAILWAYS COMPANY is inquiring for 15 interurban cars.

Iron and Steel

THE SOUTHERN PACIFIC is inquiring for 94,000 tons of rail.

THE MISSOURI PACIFIC is inquiring for 3,000,000 tie plates for its own use and 1,250,000 for the International Great Northern.

Signaling

THE TERMINAL RAILROAD ASSOCIATION OF ST. LOUIS has ordered from the General Railway Signal Company material for enlarging the interlocking at Valley Junction, Mo.; 96 levers to be increased to 120 levers.

THE BOSTON & MAINE has ordered from the Union Switch & Signal Company material for the switches, electrical apparatus and signals necessary to install remotely operated switches at Hoosac Tunnel, Mass., Brattleboro, Vermont, and seven other locations.

THE READING COMPANY has contracted with the Union Switch & Signal Company for the installation of automatic block signals on its line between Nicetown Junction, Pa., and Neshaminy Falls, 12 miles, double track; and also between Jenkintown, Pa., and Yardley, 20 miles, partly four track. The contract includes additions and changes at 12 interlocking plants, and there will also be four sub-stations for supplying the alternating current power.

Supply Trade

The Strauss Bascule Bridge Company, Chicago, has changed the corporate name of the company to the **Strauss Engineering Corporation.**

The Harnischfeger Corporation, Milwaukee, Wis., has opened a branch office at 194 Boylston street, Boston, Mass. **E. J. Calder** is district manager.

The Hale & Kilburn Co., and the **Six Wheel Company** have removed their offices from 30 Church street to 2104 Graybar building, 420 Lexington avenue, New York City.

L. J. Melson, who represented the **Reading Iron Company,** Reading, Pa., in the South, has been promoted to district sales representative in the Cincinnati, Ohio, office.

The Baldwin Locomotive Works and the **Standard Steel Works Company** have removed their St. Louis, Mo., offices from the Boatmen's Bank building to the Telephone building, 1010 Pine street.

R. P. Nick has been transferred from the Baltimore, Md., office of the **Lincoln Electric Company,** Cleveland, Ohio, to the Lancaster, Pa., office, where he will be in charge of the sale of motors and welders.

The Morton Manufacturing Company, Chicago, has appointed **Mitsui Bussan Kaisha, Limited,** Tokyo, Japan, its representative for the far east, the territory including the Japanese Empire and Manchuria, China.

The Hazard Manufacturing Company, Wilkes Barre, Pa., maker of electrical wires and cables, has removed its Chicago office to 1840 Midland building, 168 W. Adams street. The Chicago office and warehouse of the **Hazard Wire Rope Company,** maker of wire rope and wire rope fittings, now separate and distinct from the Hazard Manufacturing Company, will be retained at 32 S. Clinton street, Chicago.

The Pittsburgh Forgings Company, has purchased the Coraopolis plant of the Pittsburgh Knife & Forge Company, assuming all its orders, contracts, etc. The company will manufacture, at Coraopolis, the same line of railroad and automotive forgings as in the past. The Pittsburgh Forgings Company, Coraopolis, Pa., has a railroad sales office in the First National Bank building, Pittsburgh. **Edwin Hodge, Jr.,** is president of the company and **T. C. King** is manager of railroad sales.

W. W. Coleman, president of the Bucyrus Company, has been elected president and chairman of the board of the **Bucyrus-Erie Company** which has been formed to consolidate the Bucyrus Company and the Erie Steam Shovel Company which will become effective January 1. **E. K. Swigart,** vice-president of the Bucyrus Company, has been elected senior vice-president, **F. B. McBrier,** president of the Erie Company, **A. C. Vicary,** vice-president of the Erie Company, **D. P. Eells,** second vice-president of the Bucyrus Company and **W. M. Bager,** second vice-president of the Bucyrus Company, have been elected vice-presidents of the new company. **G. A. Morrison,** second vice-president of the Bucyrus Company has been elected vice-president and treasurere of the new company, while **J. G. Miller,** assistant secretary of the Bucyrus Company, has been elected secretary.

J. D. Brandon has been appointed vice-president of the **American Arch Company** with headquarters at Chicago. He entered the service of the Cleveland, Cincinnati, Chicago & St Louis in 1906, remaining with that road until

J. D. Brandon

1915 as general foreman at the Indianapolis shops. He then entered the service of the American Brake Shoe & Foundry Company in 1915 at New York. In 1919 he went to the service department of the American Arch Company at Montreal, where he stayed until 1924, at which time he joined the Pittsburgh Steel Products Company in the sales department, leaving that work on May 1, 1927 to return to the American Arch Company as assistant to senior vice-president which position he held until appointed vice-president as above noted.

Samuel P. Bush, who has resigned as president and general manager of the **Buckeye Steel Castings Company,** was born on October 4, 1863, at Brickchurch,

N. J., and graduated from the Stevens Institute of Technology in 1884. He entered railway service on May 1 of the same year as an apprentice in the shops of the Pennsylvania at Logansport, Ind., and in 1886, was transferred to the Columbus, Ohio, shops. In 1888, he became a draftsman at Columbus and two years later was promoted to assistant engineer of motive power. In 1891 he was appointed master mechanic at

S. P. Bush

Dennison, Ohio, and at the end of that year was appointed master mechanic of the principal shops at Columbus, which position he held until 1894 when he was promoted to superintendent of motive power on the Southwest System. He held the latter position until 1899 when he resigned to enter the employ of the Chicago, Milwaukee & St. Paul as general superintendent of motive power, which position he held until 1901, when he resigned to become vice-president and general manager of the Buckeye Steel Castings Company. In 1908 he was elected president, which position he has held until his resignation.

Obituary

Frederick F. Fitzpatrick, president of the American Locomotive Company, with headquarters at New York, died on November 16.

H. G. Steinbrenner, vice-president of the Industrial Brown Hoist Corporation, Cleveland, Ohio, died in Chicago on November 16.

Trade Publications

LOCOMOTIVE PROGRESS.—Among the representative locomotives of recent design shown in a bulletin of 40 pages issued by the Superheater Company, 17 East Forty-second street, New York, are the Texas 2-10-4 type for the Texas & Pacific, the Hudson 4-6-4 type for the New York Central, the three-cylinder 4-12-2 type for the Union Pacific, the Northern 4-8-4 type for the Canadian National, and Baldwin Locomotive No. 60,000. General dimensions are given for each of the locomotives shown, also a brief description of some of the specialties with which they are equipped and the service for which they were built.

Construction

BELLEFONTE CENTRAL.—This company has applied to the Interstate Commerce Commission for authority to build an extension from State College to Fairbrook, Pa., 6 miles.

BURLINGTON, MUSCATINE & NORTHWESTERN.—E. L. Tobie, president, has announced plans of this company for the rehabilitation of 44 miles of the 54-mile line between Muscatine, Iowa, and Burlington, which was recently placed in operation in the vicinity of Muscatine after being closed for traffic in March, 1927. The total expenditure for the rehabilitation of the line, including 11 miles which have already been reconstructed, is estimated at $600,000.

CANADIAN NATIONAL.—Plans have been prepared for the construction of a brick freight station and office building at Melfort, Sask. This company also plans the construction of a 100-ton mechanical coaling dock at Turtleford, Sask. A contract for the construction of section foremen's dwellings, section bunkhouses and section toolhouses at Bengough, Sask., Roucott, Harptree and Willowbunch has been let to W. A. Dutton, Winnipeg, Man. The contract for the construction of a reinforced concrete and brick freight station at Saskatoon, Sask., has been awarded to Cassidy & Co., Saskatoon. The structure will have outside dimensions of 383 ft. by 41 ft. and a floor area of 14,400 sq. ft.

CANADIAN PACIFIC.—A contract for the construction of buildings on the extension from Maxstone, Sask., west 30 miles, on the extension of the Lanigan-Melfort branch from Melfort, Sask., north 10 miles, and on the Cutknife-Whitford Lake, Sask., extension, 66 miles, has been let to W. A. Dutton, Winnipeg, Man. J. N. Simmons, Winnipeg, has been awarded the contract for the construction of buildings on the branch under construction between Asquith, Sask., and Cloan, 20 miles.

CHICAGO, MILWAUKEE & ST. PAUL.—The Federal Court at Chicago has authorized this company to expend $100,360 for the construction of a bridge over the Wisconsin river two miles west of Lone Rock, Wis., to replace seven truss spans each 105 ft. long, which were built in 1886. The bridge will consist of six through girder spans each 52 ft. long, and four pony truss spans each 103 ft. long. Authorization has also been given for the construction of a 200 ft. double track bridge over the Iroquois river, three miles north of Webster, Ill., at a cost of $42,400. This bridge will consist of two deck girder spans each 90 ft. long and four deck girder spans each 57 ft. long and will replace the bridge destroyed by a derailed coal train on September 19. This company will also construct a 100-ton mechanical balance bucket type coaling station at Bonilla, S. D., at a cost of $16,100, replacing bucket and derrick type coaling stations at Tulare, S. D., and Woonsocket.

CINCINNATI UNION TERMINAL COMPANY.—Construction of a union passenger station at Cincinnati, Ohio, has been assured by the execution of a preliminary agreement between representatives of the Baltimore & Ohio, the Chesapeake & Ohio, the Cincinnati, New Orleans & Texas Pacific, the Cleveland, Cincinnati, Chicago & St. Louis, the Louisville & Nashville, the Norfolk & Western and the Pennsylvania and the Cincinnati Railroad Terminal Development Company at Cincinnati on July 14 and formally announced on November 5. A statement made by George D. Crabbs, president of the Development company, Robert A. Taft, secretary, and H. A. Worcester, vice-president of the Big Four, gives the general location of the station as the Mill Creek valley in the west end of the city where coach and engine terminals will also be situated. Henry M. Waite, former city engineer of Cincinnati and city manager of Dayton, Ohio, has been engaged to act as chief engineer for the project with C. A. Wilson, former chief engineer of the Wheeling & Lake Erie and the Cincinnati, Hamilton & Dayton, as consulting engineer. It is estimated that the entire project, including the union passenger station, equipment terminal, improved freight facilities and expenditures by the various individual railroads to conform to the plan, will call for the expenditure of approximately $75,000,000. About half of this amount will be necessary for the passenger facilities. Surveys were begun on November 7 and it is expected that the first contracts for the work will not be awarded before May 1, 1928, with final completion during 1932. Mention was made in the statement of the new bridge of the C. & O. over the Ohio river and the enlarged freight yards of the Big Four and the B. & O., now under construction, as units in the general terminal project. The same railroads have reached an agreement with the Hamilton County Commissioners for the construction of the Eighth Street viaduct in Cincinnati. The carriers will contribute $100,000 of the total cost of the structure which is estimated to be $300,000.

NIPISSING CENTRAL.—A contract for the construction at Rouyn, Que., of a reinforced concrete and brick passenger station, with outside dimensions of 100 ft. by 26 ft., and a frame freight station, with outside dimensions of 100 ft. by 30 ft., has been let to Angus and Taylor, Ltd., North Bay, Ont.

"Great Lakes-St. Lawrence Waterways" will be the subject of a joint discussion at a luncheon meeting of the Traffic Club of Chicago on November 22. Hon. W. L. Harding, ex-governor of Iowa and President of the Great Lakes-St. Lawrence Tidewater Association, and Hon. Stephen Wallace Dempsey of Buffalo, N. Y., chairman of the Rivers and Harbors committee of the House of Representatives, Washington, D. C. will take the affirmative and negative sides, respectively of the question of the desirability and practicability of this project.

Financial

ALABAMA GREAT SOUTHERN.—*Extra Dividends.*—Directors have declared extra dividends of 3 per cent on both the preferred and common stocks in addition to the regular semi-annual dividend of 3½ per cent which has been paid at this rate on both issues since 1917. The preferred dividends are payable February 13 to stockholders of record January 13 and the common dividends are payable December 30 to stockholders of record November 25. Last May extra dividends of like amounts were paid on both the preferred and common stocks. Both issues are of $50 par value.

BOSTON & MAINE.—*Director.*—A. C. Higgins, treasurer of the Norton Company, Worcester, has been elected a director succeeding Vice-President William J. Hobbs, resigned.

CHICAGO, ST. PAUL, MINNEAPOLIS & OMAHA.—*Equipment Trust Certificates.*—The Interstate Commerce Commission has authorized an issue of $830,000 equipment trust of 1917 certificates, series D, 1927. The certificates will bear interest at 4¾ per cent and are to be sold at 101.52 to Halsey, Stuart & Co., which submitted the highest of 20 bids. At this price the average annual cost to the carrier will be approximately 4.43 per cent. The equipment includes 500 50-ton steel underframe box cars at a unit price of $2,230, aggregating $1,115,000.

CINCINNATI SOUTHERN.—*Lease.*—Through a popular vote at Cincinnati, Ohio, on November 8, the Cincinnati Southern, which is owned by that city, was leased to the Cincinnati, New Orleans & Texas Pacific for 99 years. The present lease which expires in 1966 will be replaced by the new lease which was considered necessary to secure the program of extensive improvements planned for this line.

GULF, COLORADO & SANTA FE.—*Lease.*—This company has applied to the Interstate Commerce Commission for authority to lease the property of the Texas & Gulf, on the expiration of a ten-year lease on January 1, on such terms and conditions as may be found by the commission to be just and reasonable.

KANSAS CITY, MEXICO & ORIENT.—*Reorganization.*—The new railroad company has filed supplemental applications with the Interstate Commerce Commission renewing its original applications for authority to acquire the properties of the K. C. M. & O., in Kansas and Oklahoma and also of the K. C. M. & O. of Texas, pursuant to the reorganization plan, which had not been disposed of by the commission pending court proceedings relating to the reorganization. The supplemental applications also ask authority to assume a note for $2,500,000 to the Secretary of the Treasury and also to issue 35,000 shares of stock, but omit the request as to 40,000 shares, because of a change in the plan.

MISSOURI PACIFIC.—*New Directors.*—A. D. Geoghegan, president of the Wesson Oil & Snowdrift Company, Inc., has been elected a director succeeding H. L. Utter, resigned, and Archibald R. Graustein, president of the International Paper Company, has been elected a director to take the place of B. F. Bush, deceased.

NEW ORLEANS, TEXAS & MEXICO.—*Bonds.*—The Interstate Commerce Commission has authorized this company to issue $5,989,000 of first mortgage 5 per cent gold bonds for pledge.

OUTER HARBOR TERMINAL.—*Acquisition.*—This company has applied to the Interstate Commerce Commission for authority to acquire and operate the railroad properties of the Outer Harbor Dock & Wharf Company at Los Angeles harbor, Calif., including 6.33 miles of switching lines, by issuing $130,000 of its capital stock in exchange.

PENNSYLVANIA TANK LINE.—*Equipment Trust.*—Freeman & Co. of New York, the Peoples Savings & Trust Company of Pittsburgh, the First National Bank of Sharon, Pa., and the First National Bank at Pittsburgh, have bought $6,000,000 5 per cent equipment trust certificates, series AA1, at prices ranging from 4.75 per cent to 5.30 per cent, depending upon maturity. The certificates are to be secured through transfer to the trustee of title to 5,500 standard all steel tank cars subject to the rights of the present lessees. The cars have been estimated to have a value in excess of $8,240,000.

PENNSYLVANIA TUNNEL & TERMINAL.—*Stock.*—This company has applied to the Interstate Commerce Commission for authority to issue and deliver to the Pennsylvania $25,000,000 of capital stock in part payment of its indebtedness for advances.

PITTSBURGH, YOUNGSTOWN & ASHTABULA.—*Bonds.*—The Interstate Commerce Commission has authorized this company to issue $1,485,000 of first general mortgage bonds, to be delivered to the Pennsylvania at par and to be guaranteed by it.

PITTSBURGH, YOUNGSTOWN & ASHTABULA.—*Bonds Authorized.*—The Interstate Commerce Commission has authorized this company to issue $1,485,000 first general mortgage bonds, series D, to be delivered to the Pennsylvania at par, in reimbursement for the furnishing of funds to meet the maturity of a like amount of P. Y. & A. first consolidated mortgage 5 per cent bonds, due November 1, 1927. The commission granted authority to the Pennsylvania to assume obligation and liability as lessee.

ST. LOUIS-SAN FRANCISCO.—*Abandonment.*—This company and the Kansas City, Clinton & Springfield have applied to the Interstate Commerce Commission for authority to abandon service on the line from Belton, Kan., to Stanley, 8.98 miles, operated by the Frisco under lease from the K. C. C. & S.

SAN LUIS SOUTHERN.—*To be Sold.*—This company which operates between Blanca, Colo., and Jaroso, 31 miles, will be sold by the sheriff of Costilla county at Alamosa, Colo., on December 12. The property, which has been in the hands of a receiver since February 29, 1924, has an indebtedness amounting to $500,000. The International Trust Company holds a decree of foreclosure.

SOUTHERN.—*Abandonment.*—The Interstate Commerce Commission has denied this company's petition for a reconsideration and modification of the order in which the commission recently denied permission for the abandonment of the line from Morristown, Tenn., to Corryton, but without prejudice to the renewal of the application after two years.

SOUTHERN PACIFIC.—*Branch Abandonment.*—The Interstate Commerce Commission has issued a certificate authorizing the abandonment of 1.18 miles of the so-called Beetox spur in Ventura County, Cal.

UNION PACIFIC.—*New Director.*—F. W. Charske, vice-president and controller, has been elected a director. He was recently elected a director of the Oregon-Washington Railroad & Navigation Company, the Oregon Short Line and the Los Angeles & Salt Lake.

WHEELING & LAKE ERIE.—*Denial of Trunk Line Directorate Applications Recommended to I. C. C.*—The Interstate Commerce Commission on November 16 made public a proposed report by C. V. Burnside, assistant director of its Bureau of Finance, and Examiner O. D. Weed, recommending denial of the applications of P. E. Crowley, president; A. H. Harris, vice-president, and W. S. Hayden, director, of the New York Central; Daniel Willard, president; G. M. Shriver, vice-president, and Newton D. Baker, director, of the Baltimore & Ohio; and Walter L. Ross, president of the New York, Chicago & St. Louis, for authority to serve as "interlocking" directors of the Wheeling company.

The report further recommends that "should the commission accept the view that the acquisitions of Wheeling stock in sufficient amount to give control, and the applications for representation on the Wheeling directorate, are premature, if not illegal, the trunk lines in interest should be required to retrace their steps immediately and in such manner as to secure the continued management and operation of the Wheeling as an independent carrier, without trunk line affiliations, until, in appropriate proceedings under Section 5, the issues presented may be considered in their entirety." After stating that the three roads each acquired a 17 per cent interest in the stock of the Wheeling and that the applications for representation on the directorate were filed pursuant to the "four-system" plan for the consolidation of all of the carriers in eastern trunk line territory into four great systems, and that it is the apparent purpose of the three companies ultimately to acquire all of the stock of the Wheeling, the report says that the wisdom of providing joint control instead of single control of important lines, with

the possible exception of terminal lines, "seems very questionable."

It adds that the four-system plan has never been formally presented to or considered by the commission, that it was opposed by the Pennsylvania, that other important interests have not been heard, and that "obviously the commission is not in position upon this record to render a decision upon the important questions involved, or to take any unnecessary steps which might be construed as an approval of this plan or any other. Although it has recommended changes in the governing statute, it is still under obligation to recommend a complete plan of consolidation." Denial alone, the report says, however, would not leave the matter in satisfactory condition and the recommendation is then made relating to possible requirement that the trunk lines give up their interest in the company. Although there is no suggestion that the trunk lines in this instance intended an evasion of the law, the report says, the commission should not, either expressly or by implication, disclaim its jurisdiction of such acquisitions. The trunk line applications were vigorously opposed at the hearings by the Pittsburgh & West Virginia, Wabash, and Ann Arbor roads, that are understood to be included in L. F. Loree's "fifth system" plan.

Average Price of Stocks and of Bonds

	Nov. 15	Last week	Last year
Average price of 20 representative railway stocks..	120.64	119.30	101.98
Average price of 20 representative railways bonds.	96.89	96.46	91.80

Valuation Reports

The Interstate Commerce Commission has issued final valuation reports finding the final value for rate-making purposes of the property owned and used for common-carrier purposes, as of the respective valuation dates, as follows:

Apalachicola Northern.....	$1,640,000	1917
Bath & Hammondport.....	162,043	1918
Lakeside & Marblehead.....	405,000	1917
Tionesta Valley.....	828,800	1917

Dividends Declared.

Alabama Great Southern—Common, $1.75, semi-annually; common, $1.50, extra, both payable December 30 to holders of record November 25. Preferred, $1.75, semi-annually; preferred, $1.50, extra, both payable February 13, 1928, to holders of record January 13.

Atlanta & West Point.—4 per cent, payable December 31 to holders of record December 19.

Canadian Pacific.—Common, 2½ per cent, quarterly, payable December 31 to holders of record December 1.

Chestnut Hill.—$.75 cents, quarterly, payable December 5 to holders of record November 21.

Chicago & North Western.—Common, 2 per cent, semi-annually; preferred, 3½ per cent, semi-annually, both payable December 31 to holders of record December 1.

Chicago, St. Paul, Minneapolis & Omaha.—7 per cent preferred, 5 per cent, payable December 31 to holders of record December 1.

North Pennsylvania.—$1.00, quarterly, payable November 25 to holders of record November 14.

Philadelphia, Germantown & Norristown.—$1.50, quarterly, payable December 5 to holders of record November 21.

Pittsburgh, Youngstown & Ashtabula.—Preferred, 1¾ per cent, quarterly, payable December 1 to holders of record November 21.

Southern Pacific.—1½ per cent, quarterly, payable January 3, 1928, to holders of record November 25.

Union Pacific.—Common, 2½ per cent, quarterly, payable January 3, 1928, to holders of record December 1.

Western Railway of Alabama.—4 per cent, payable December 31 to holders of record December 19.

Officers

Executive

Following the acquisition of control of the Pecos Valley Southern by the Texas & Pacific, **William H. Williams,** chairman of the board of directors; **J. L. Lancaster,** president; **Carl A. de Gersdorff,** general counsel; **T. D. Gresham,** general attorney, and **A. L. Ewing,** assistant treasurer of the T. & P. have been elected to similar positions on the P. V. S. **J. E. Davey,** vice-president and assistant secretary and assistant treasurer of the International-Great Northern and the San Antonio, Uvalde & Gulf, with headquarters at New York, has in addition been elected vice-president of the Pecos Valley Southern. **M. D. Cloyd,** assistant secretary and assistant to the president of the T. & P., with headquarters at Dallas, Tex., has been in addition elected secretary of the P. V. S. **T. H. Beauchamp** has been elected treasurer, with headquarters at Pecos, Tex. **C. W. Veitch,** secretary and treasurer of the T. & P., has also been appointed assistant secretary and assistant treasurer of the P. V. S. **A. J. Baird,** auditor of the T. & P., has also been appointed assistant auditor of the P. V. S.

J. W. Graham, who has been elected vice-president in charge of traffic of the New York, Chicago & St. Louis, with headquarters at Cleveland, O., was born on March 21, 1879, at Toledo, Ohio, and entered railway service at the age of 17 as an office boy for the receiver

J. W. Graham

and general manager of the Toledo, St. Louis & Kansas City (now a part of the Nickel Plate) at Toledo. He was advanced to the position of clerk late in 1896 and for the next 10 years occupied various clerical positions in the general freight office, becoming contracting freight agent in January, 1906. In the following year he was advanced to chief rate clerk of the T. St. L. & W. and the Chicago & Alton, where he remained until December, 1909, when he was appointed chief clerk in the freight traffic department of both railroads. From February, 1910, to September, 1912, Mr. Graham served successively as chief of the tariff bureau at Chicago and as assistant freight agent at the same point. Upon the discontinuance of the joint operation of these railroads in September, 1912, he was appointed assistant general freight agent of the T., St. L. & W., being promoted to general freight agent in June, 1917. On March 1, 1920, Mr. Graham was promoted to traffic manager, becoming traffic manager of the Clover Leaf district of the Nickel Plate when it absorbed the T., St. L. & W. in 1923. He was promoted to general traffic manager of the Nickel Plate in January, 1927, with headquarters at Cleveland, a position he held until his election to vice-president in charge of traffic.

Financial, Legal and Accounting

W. G. Bruin, secretary of the Western Pacific, with headquarters at San Francisco, Cal., has in addition been elected secretary of the Sacramento Northern.

J. G. Badger has been appointed general auditor of the Mississippi Southern, with headquarters at Chicago, succeeding **J. L. Lenihan,** who has been appointed assistant general auditor, with headquarters also at Chicago.

E. E. Breese, comptroller of the Chicago, Springfield & St. Louis, with headquarters at New York, has in addition been appointed comptroller of the Jacksonville & Havana. **Epler C. Mills,** general attorney of the C. S. & St. L. with headquarters at Springfield, Ill., has been appointed general attorney of the J. & H., with headquarters at Virginia, Ill. **A. G. Stevens,** has been appointed general attorney of the C. S. & St. L., with headquarters at Springfield, succeeding Mr. Mills.

Operating

J. R. Cavanagh, assistant to superintendent of freight transportation of the Cleveland, Cincinnati, Chicago & St. Louis, with headquarters at Indianapolis, Ind., has retired on pension, effective November 1, and the position of assistant to superintendent of freight transportation has been abolished.

A. R. Ayers, assistant general manager of the New York, Chicago & St. Louis, with headquarters at Cleveland, O., has been appointed general manager, with headquarters at the same point, succeeding **C. E. Denney,** who was vice-president and general manager. The position of assistant general manager has been abolished.

J. R. Burns, trainmaster in charge of yard operation on the Illinois Central at Memphis, Tenn., has been placed in charge of industrial operation at the same point and has been succeeded in

the yard operation by **E. J. Redon,** trainmaster at Baton Rouge, La. **J. M. Chandler,** trainmaster at Greenville, Miss., has been transferred to succeed Mr. Redon and Mrs. Chandler has been succeeded at Greenville by **L. R. Swisher,** chief dispatcher at that point.

Charles C. Blanc, who has been appointed superintendent of terminals of the Atlantic Coast Line, with headquarters at Jacksonville, Fla., was born on November 18, 1890, at Pineville, Ky. He attended Carson and Newman College at Jefferson City, Tenn., during 1906 and 1907, and entered railway service on November 12, 1912, as a trainman on the Atlantic Coast Line. Mr. Blanc was advanced to conductor on December 18, 1917, and to acting trainmaster on November 1, 1924. He was appointed trainmaster on October 18, 1926, which position he was holding at the time of his recent appointment as superintendent of terminals.

Paul Jones, assistant superintendent of the Cincinnati division of the Pennsylvania at Cincinnati, Ohio, has been transferred to the St. Louis division, with headquarters at St. Louis, Mo. **D. D. Flanagan,** assistant trainmaster on the Toledo division, has been promoted to trainmaster on the St. Louis division. **E. M. Pence,** division operator of the Cincinnati division, has been promoted to assistant trainmaster and division operator of the same division, with headquarters at Cincinnati. **E. C. Gegenheimer,** assistant trainmaster on the Columbus division, with headquarters at Columbus, Ohio, has been transferred to the Toledo division, with headquarters at Toledo, Ohio, succeeding **F. H. Krick,** who has been transferred to succeed Mr. Gegenheimer. **F. L. Heller** has retired as assistant trainmaster on the Cleveland and Pittsburgh division, with headquarters at Cleveland, Ohio.

Traffic

E. E. Mack has been appointed general agent of the Midland Valley and the Kansas, Oklahoma & Gulf at Ft. Smith, Ark.

L. A. Sachbauer has been appointed assistant general freight agent of the Missouri Pacific, with headquarters at St. Louis.

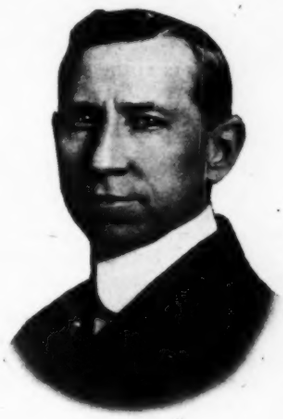
Henry W. Stigler, has been appointed general agent of the Louisiana & Arkansas at Memphis, Tenn., a newly created position.

B. R. Starnes has been appointed general agent of the Chicago, Attica & Southern at Birmingham, Ala., a newly created position.

George S. Ross, secretary and assistant to the vice-president of New York, Chicago & St. Louis, with headquarters at Cleveland, Ohio, has been appointed assistant vice-president of the traffic department in addition to his present duties as secretary.

F. H. Ball, traveling freight agent of the Fernwood, Columbia & Gulf at Tylertown, Miss., has been promoted to assistant general freight and passenger agent, with headquarters at the same point.

J. H. Howard, assistant comptroller of the Chicago, Milwaukee & St. Paul, with headquarters at Chicago, has been appointed assistant chief traffic officer, with headquarters at the same point, effective November 15. His jurisdiction will extend over both the freight and passenger departments on the system,



J. H. Howard

including outside agencies. Mr. Howard was born in Cincinnati, Ohio, and graduated from a private school in that city, entering railway service in 1896 as a general clerk on the Cincinnati, New Orleans & Texas Pacific at Cincinnati. In 1898 he became a freight clerk on the Chicago & Alton at Chicago, later being advanced successively to local freight agent, freight solicitor, traveling auditor, freight auditor and freight claim agent. Mr. Howard served from 1908 to 1913 as freight claim agent of the Chicago Great Western and he then returned to the C. & A. as general claim agent where he remained until July, 1918, when he was appointed manager of the claims and property section of the United States Railroad Administration. After the end of federal control in 1920 he served as general claim agent of the Alton until January, 1921, when he was appointed assistant comptroller of the Milwaukee, which position he held until his appointment as assistant chief traffic officer.

The general offices of the Kansas & Sidell have been moved from Indianapolis, Ind., to Brocton, Ill., and **E. W. Van Zant** has been appointed traffic manager and general freight accountant, with headquarters at Brocton.

J. K. James, commercial agent of the St. Louis Southwestern at St. Louis, Mo., has been promoted to general freight agent, with headquarters at the same point. Mr. James will have charge of solicitation in St. Louis territory, including interchange with connecting lines through the St. Louis gateway.

R. F. Hodgins, commercial agent of the Kansas City, Mexico & Orient at Los Angeles, Cal., has been promoted to executive general agent, with headquarters at that point. **W. J. Hilton,** live stock agent at San Angelo, Tex., has been promoted to general live stock agent, with headquarters at the same point.

Ralph H. Wallace, passenger traffic manager of the Erie, with headquarters at New York, has been relieved from active duty at his own request after 53 ears of service, effective December 1. He will be succeeded by **Clarence C. Howard,** at present vice-president of the American Exchange Irving Trust Company, N. Y.

R. L. Burnap, freight traffic manager of the Grand Trunk Western (part of the Canadian National), with headquarters at Chicago, has been appointed assistant general freight traffic manager of the Canadian National and the Grand Trunk System with jurisdiction in respect to the above mentioned companies' freight traffic in the United States, with headquarters at Montreal, Que. Mr. Burnap was born on September 20, 1872, at Burlington, Vt., and was graduated from Dartmouth College in 1894. He entered railway service on October 15, 1894, as a clerk in the office of the station agent of the Central Vermont (part of the Canadian National) at Ogdensburg, N. Y. From April 15 to December 5, 1895, he was timekeeper of the same road at Ogdensburg, and from the latter date until April 15, 1896, he was clerk to the division freight agent at the same point. From April 20, 1896, until September 1 of the same year, he was clerk in the commercial agent's office at New York, and at the latter time went to New London, Conn. On February 1, 1900, Mr. Burnap was appointed commercial agent of the National Despatch at New York, and on August 14, 1905, became general freight agent of the Central Vermont, with headquarters at St. Albans, Vt. Three years later Mr. Burnap entered the service of the Grand Trunk as assistant general

R. L. Burnap

freight agent at Chicago. On November 1, 1911, he was appointed assistant freight traffic manager of the same system at the same point. This position he held until May 1, 1919, when he was appointed traffic manager. On March 1, 1920, Mr. Burnap became freight traffic manager at Chicago, which position he was holding at the time of his recent appointment.

Ferris A. Reid, who has been appointed general freight and passenger agent of the Chicago, Springfield & St. Louis and the Jacksonville & Havana, with headquarters at Springfield, Ill., was born on May 20, 1897, at Taneytown, Md. He entered railway service at the age of 16 years when in April, 1914, he became a student at the Taneytown station on the Pennsylvania. After a short period of miscellaneous duties about the passenger and freight station he was advanced to emergency clerk, later being further advanced to extra clerk and in September, 1916, he was promoted to clerk at Glen Rock, Pa. During 1916 and 1917 Mr. Reid attended a night business college at Baltimore, Md. In October, 1917, he was appointed traveling clerk and agent and in the following year acting agent. Mr. Reid was advanced to extra freight and passenger agent in 1919 and in November, 1924, he was appointed to organize, manage and dispatch the motor freight system of the Pennsylvania in the Baltimore Terminal territory, with the title of extra agent, where he remained until his appointment as general freight and passenger agent of the C. S. & St. L. and the J. & H.

F. A. Reid

Mechanical

E. R. Battley, having completed special duties assigned to him, has resumed his position as superintendent of motive power of the Central region of the Canadian National, with headquarters at Montreal, Que.

Albert Sutherby, master mechanic on the Western district of the Erie, with headquarters at Youngstown, O., has been transferred in the same capacity to the Mahoning division and the Kent and Akron terminals, with headquarters at Cleveland, O., succeeding **F. H. Murray,** promoted. **George T. Depue** has been appointed master mechanic at Weehawken, N. J., in charge of marine and dock equipment maintenance.

Engineering, Maintenance of Way and Signaling

Louis J. Owens, chief designer in the office of the engineer of buildings of the Chicago, Burlington & Quincy at Chicago, has been promoted to supervisor of power plants, reporting to the vice-president in charge of operation, and with headquarters at the same point.

Special

Dr. A. R. Metz has been appointed chief surgeon of the lines of the Chicago, Milwaukee & St. Paul east of the Missouri river, with headquarters at Chicago, succeeding **Dr. B. F. Lounsbury,** deceased.

Ashley Edwards has been appointed special publicity agent, and editor, Canadian bureau of information, department of colonization and development of the Canadian Pacific, with headquarters at Montreal, Que., succeeding **Norman S. Rankin,** deceased.

Obituary

Omer Edson Linn, assistant trainmaster on the Pennsylvania, with headquarters at Decatur, Ill., died on a train near Armington, Ill., on October 19, at the age of 56 years.

William Hausmer Hoyt. chief engineer of the Duluth, Missabe, & Northern, with headquarters at Duluth, Minn., died on November 10 at Rochester, Minn., after an illness of several weeks. Mr. Hoyt was born on October 13, 1867, at Owatonna, Minn., and after graduating from the University of Minnesota in 1890, entered railway service in 1891 as an assistant engineer with the United States government and for the next two years he acted as principal assistant city engineer of the City of Duluth. He returned to railway service in 1901 to become assistant chief engineer of the D. M. & N., with headquarters at Duluth and after 19 years in that capacity he was promoted to chief engineer on March 1, 1920, which position he held until his death.

W. H. Hoyt

Ridgely Cayce, secretary-treasurer of the Louisville, Henderson & St. Louis, with headquarters at Louisville, Ky., died at St. Anthony's hospital in that city on November 9 after an illness of several months. Mr. Cayce, who had been secretary of this railroad for 26 years, was born on November 25, 1853, at Mobile, Ala. He entered railway service in 1878 as a clerk in the office of the auditor of the Mobile & Ohio at Mobile and after serving in various minor capacities on this railroad he became traveling auditor of the Louisville, St. Louis & Texas (now the L. H. & St. L.). Mr. Cayce was subsequently promoted to assistant to the receiver and car accountant of the L. St. L. & T. and in 1896 when that railroad was reorganized as the L. H. & St. L. he was appointed car accountant, with headquarters at Louisville. Two years later he also assumed the duties of assistant secretary and in 1899 he became in addition assistant to the president. In 1901 his secretarial duties were increased by his promotion to secretary and in 1906 he dropped the title of assistant to the president. Mr. Cayce's title was changed to that of secretary in 1907 and in 1925 he became secretary-treasurer, remaining in the latter position until the time of his death.

Charles D. Ward, assistant to general manager of the Erie, with headquarters at Jersey City, N. J., died at Polyclinic Hospital, N. Y., on November 5 after an illness of only a few days. Mr. Ward was born on November 7, 1862, and was graduated from high school. He entered the service of the Erie in July, 1878. From April, 1879, until May, 1880, he was freight and ticket agent, and then served as pump engineer until December of the same year. From December, 1880, until August, 1919, Mr. Ward held the following positions consecutively: Clerk, acting track supervisor, station agent, yard clerk, clerk in the superintendent's office, assistant traveling auditor, traveling auditor, assistant auditor of traffic, auditor of freight accounts, freight agent at Chicago, and general agent at the New York terminal and at Chicago. In August, 1919, he was appointed assistant to general manager at New York, which position he held until January, 1920, when he again became general agent at Chicago. Two months later he was appointed auditor of the New York region, and in February, 1927, was appointed assistant to the resident vice-president. On September 16, he became assistant to general manager, which position he was holding at the time of his death.